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RAILWAY AGE

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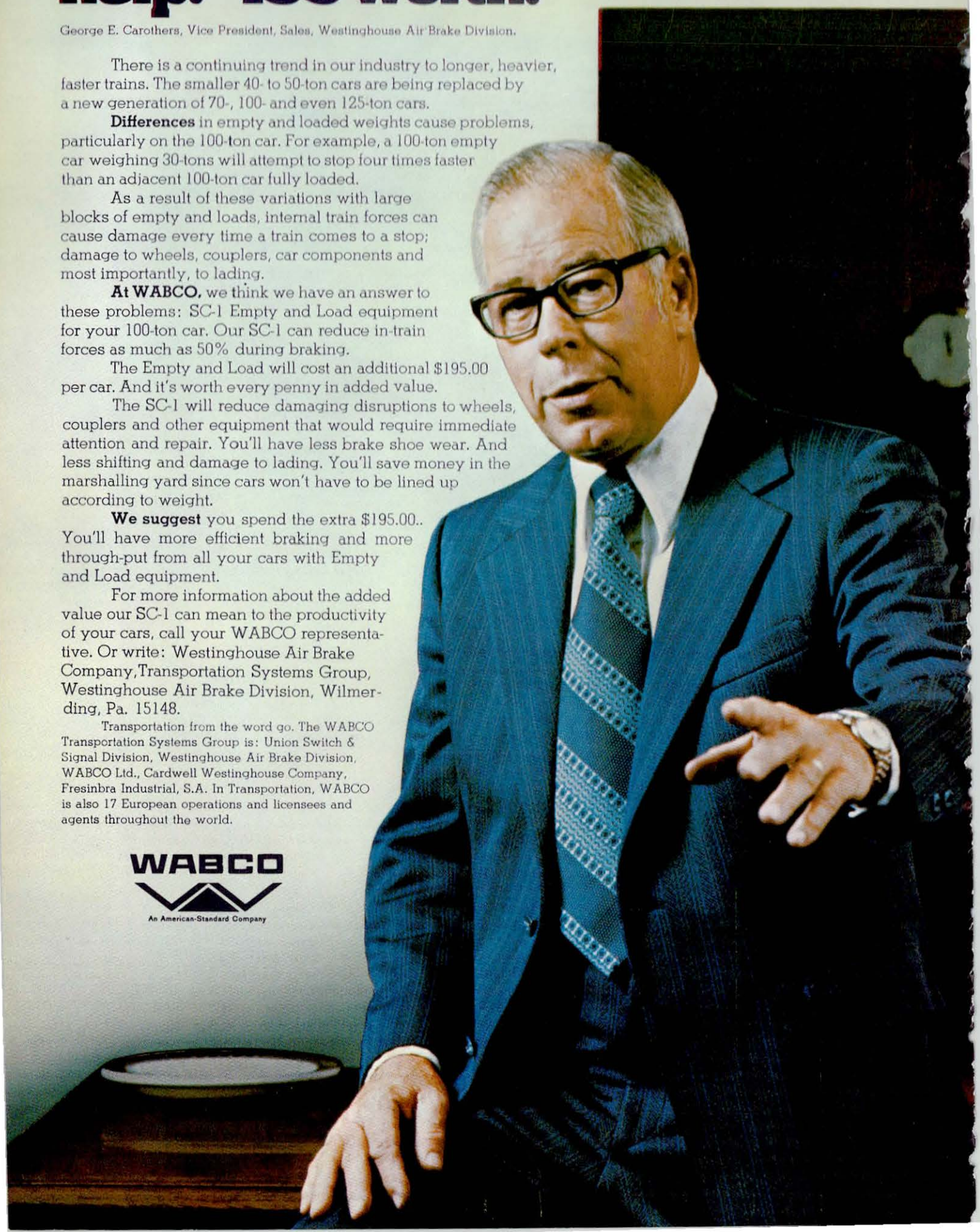
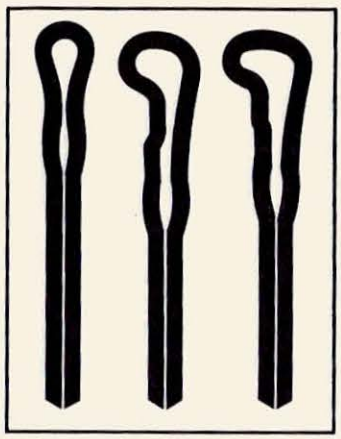


Bethlehem Lock Spikes help retain rail gage on curves



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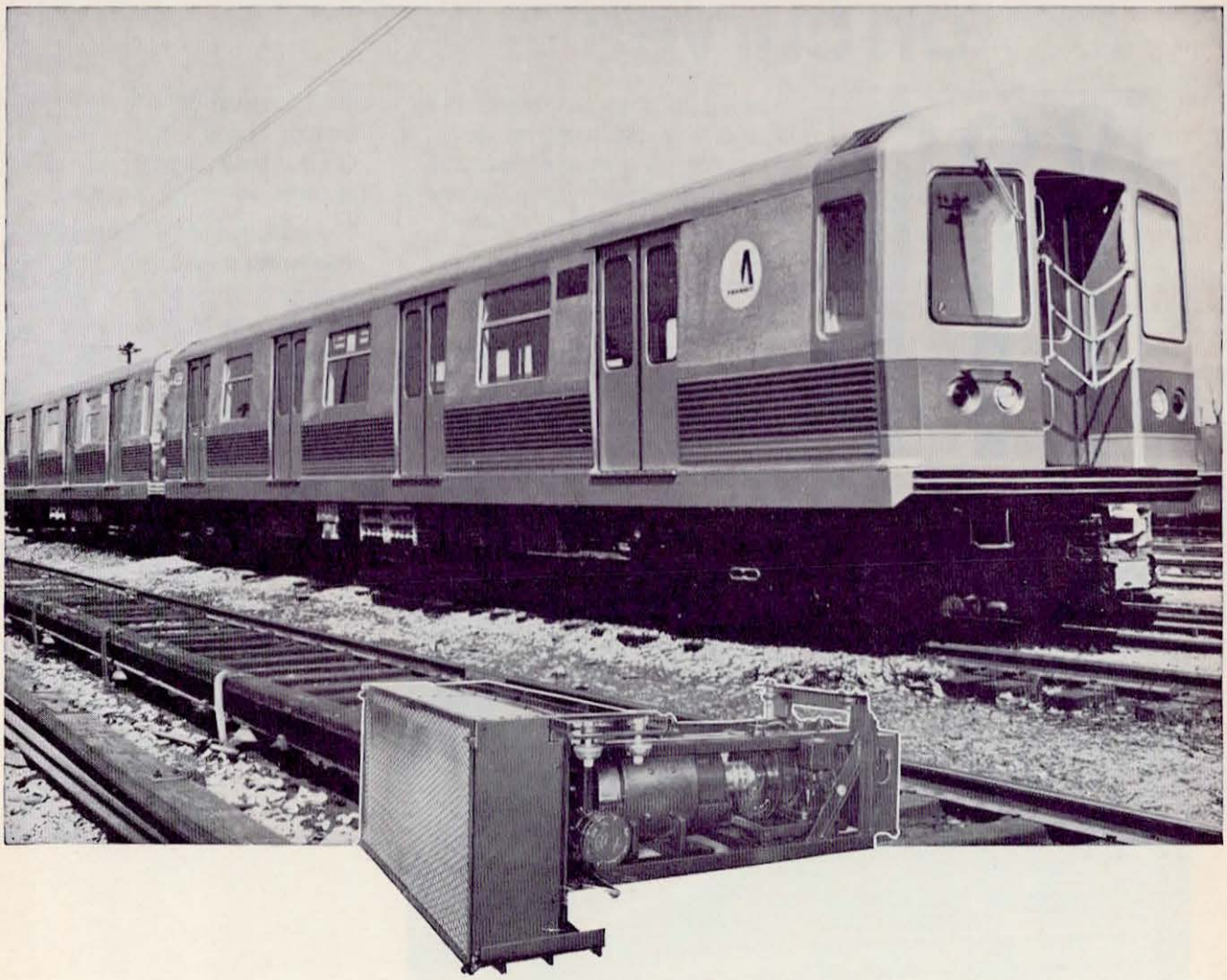

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Inside

LUTHER S. MILLER

LOCOMOTIVES RAMPANT

In a Nov. 26 CBS-TV broadcast, Eric Sevareid recalled a World War II organization (of which he declared himself to have been a charter member) whose coat of arms was "a locomotive rampant on a field of crestfallen airplanes," and whose motto was: "We travel on trains, as God intended."

Mr. Sevareid's story was perhaps apocryphal, but the point he was leading up to was a valid one: As the nation finds itself in an energy crisis of near-wartime proportions, it seems both logical and likely that it will rediscover the non-polluting efficiency of the passenger train.

A couple of days later Senator Jacob Javits (R.-N.Y.) suggested that the role of the railroad in coming days must be rather broader than people-moving. "If we are to alleviate our long-time energy problems," said Mr. Javits, "railroads must be the primary means of long-haul freight transportation. Trains are the most energy-efficient form of surface transportation in the industrial world."

This issue's cover story—a joint enterprise of our Chicago-based editorial team, Senior Editor Gus Welty and Associate Editor Robert D. Bartley—undertakes to explain some of the reasons why the Messrs. Sevareid and Javits and a growing chorus of other Americans are suddenly singing the praises of a mode of transportation which many of them had almost forgotten existed, until the crunch came. The story begins on p. 28.

The problems which the internal combustion engine now faces have important implications not only for line-haul railroads but for rail-transit and rail-commutation. How the State of New Jersey, which is heavily urbanized and must rely on public transport more than most, is facing up to the twin crises of energy and environment was the subject of a special conference at Princeton University (p. 54). At about the same time Railway Age went to the transit industry's chief spokesman, New York's Dr. William J. Ronan, for his own assessment of the situation—particularly with respect to the transit-operating assistance bill now pending in Congress (p. 56).

HOW ONE RAILROAD IS WAGING THE FIGHT

To illustrate our environment/energy story, we chose two color photos provided by the Southern Pacific—one on the front cover, one inside. This seemed appropriate, not only because they are excellent pictures, but because very few companies in this or any other industry have been busier than the SP on environmental control programs.

It's not a cheap task, and the cost is getting higher. In 1972, SP invested about $6.5 million in improving and protecting the environment in which its trains roll. SP President B.F. Biaggini estimates that through a five-year period ending in 1977, the cost could well add up to $55 million. Mr. Biaggini, who is chairman of the National Industrial Pollution Control Council's railroad sub-council, thinks it's money well spent. Says SP's chief:

"No industry, at this time in history, can undertake any endeavor without considering its effect on the air we breathe, the water we drink, and the total surroundings in which we live. Whatever decisions we make at Southern Pacific must always be made with this in mind."

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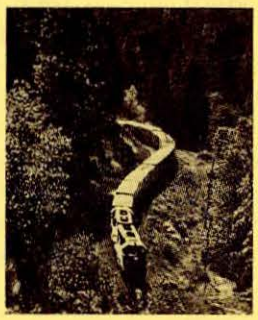
Circle 6 on coupon page 59

RAILWAY AGE

DECEMBER 10, 1973

FEATURES



COVER
The cover photo was taken in southern Oregon by Rick Kang, a Southern Pacific dispatcher at Eugene.

ENVIRONMENT/ENERGY

Guardians of the environment—conservers of energy . . . . . p. 28

Railroads beef up spending on environmental programs . . . . . p. 30

The energy sweepstakes: Railroads are easy winners . . . . . p. 36

•

GATX is developing a unit tank train . . . . . p. 40

How experts size up the crosstie crisis . . . . . p. 46

First light rail car due in '74 . . . . . p. 52

In a time of crisis, New Jersey turns to rails . . . . . p. 54

"Why should Nebraska pay for transit in New York?" . . . . . p. 56

NEWS

1973 will be a freight-car pace-setter . . . . . p. 8

Revenues strong, earnings weak . . . . . p. 8

"Unity" movement moving ahead . . . . . p. 8

ICC OKs Norfolk Southern merger . . . . . p. 8

Canada foresees record freight year . . . . . p. 8

PC operating ratio improves . . . . . p. 8

Equipment safety standards go in Jan. 1 . . . . . p. 10

DOT warming to Northeast bill? . . . . . p. 13

Fuel priority for public transport . . . . . p. 64

New bi-levels for ICG commuters . . . . . p. 64

Chicago phases out oldest equipment . . . . . p. 64

Auto-Train declares 5% stock dividend . . . . . p. 64

Rohr PRT proposed for Las Vegas . . . . . p. 64

Fuel crisis and Amtrak: A mixed blessing . . . . . p. 64

OPINION

INSIDE Locomotives rampant . . . . . p. 5

LINES ON LABOR Footnote to "don't fire him" . . . . . p. 20

VIEWPOINT For once, on the side of the angels . . . . . p. 68

WATCHING WASHINGTON PC has a new problem . . . . . p. 13

DEPARTMENTS

Advertising Sales Offices . . . . . p. 67

Carloadings . . . . . p. 63

Letters . . . . . p. 61

Market Outlook . . . . . p. 63

Moving People . . . . . p. 64

New Equipment . . . . . p. 63

New Products . . . . . p. 59

People in the News . . . . . p. 62

Suppliers . . . . . p. 62

Short and Significant

1973 WILL BE A FREIGHT-CAR PACE-SETTER

Railroads and their suppliers seem almost reluctant to concede that 1973 will be the third biggest year for freight car orders in over two decades. Through ten months of 1973, orders had been placed for over 85,000 new cars and the commercial carbuilders' backlog of 55,073 on Nov. 1, 1973, was the highest such figure since early in 1957. Inevitably, 1973 will take its place just behind 1955 (153,859 cars) and 1966 (99,752 cars) as one of the pace-setting order years since the early 1950s.

REVENUES STRONG, EARNINGS WEAK

Railroads reported all-time record gross operating revenues of $10.883 billion in this year's first nine months, up $923 million over the comparable 1972 period. But earnings were another—and sorrier—story. Net railway operating income actually declined, from $582 million in 1972 to $577 million this year. The fact that ordinary (net) income showed a slight increase, from $303 million to $355 million, was due principally to earnings from non-railroad operations. Expenses in this year's first three quarters rose to $8.581 billion from last year's $7.854 billion. Taxes went from $868 million to $968 million (payroll taxes alone increased from $468 million to $556 million.) Equipment rents were also up—from $631 million in '72 to $735 million. The rate of return on net depreciated investment for the 12 months ended Sept. 30 was 2.96%, virtually unchanged from the year-ago figure.

"UNITY" MOVEMENT MOVING AHEAD

Presidents of six rail labor organizations are the men charged with trying to reunify rail labor, which is now split between the Railway Labor Executives' Association and the Congress of Railway Unions (RA, Oct. 29, p.8). Representing RLEA are C.J. Chamberlain, Brotherhood of Railroad Signalmen; Anthony L. Krause, Brotherhood Railway Carmen; and C.J. Coughlin, Brotherhood of Locomotive Engineers. Representing CRU are C.L. Dennis, Brotherhood of Railway and Airline Clerks; Al H. Chesser, United Transportation Union; and H.C. Crotty, Brotherhood of Maintenance of Way Employes.

ICC OKs NORFOLK SOUTHERN MERGER

The ICC has approved merger of the 624-mile Norfolk Southern with the Carolina & Northwestern, a Southern subsidiary. "This merger is clearly in the best interests of all concerned, especially the customers of both railroads and the entire area served by NS," said W. Graham Claytor, Jr., Southern president. "We plan to proceed immediately with the steps necessary to consummate the merger as of the opening of business on Jan. 1, 1974." While the C&N will be the surviving corporation, it will adopt the NS name and continue in business after the merger as the Norfolk Southern Railway Co., a wholly-owned subsidiary of Southern Railway Co.

CANADA FORESEES RECORD FREIGHT YEAR

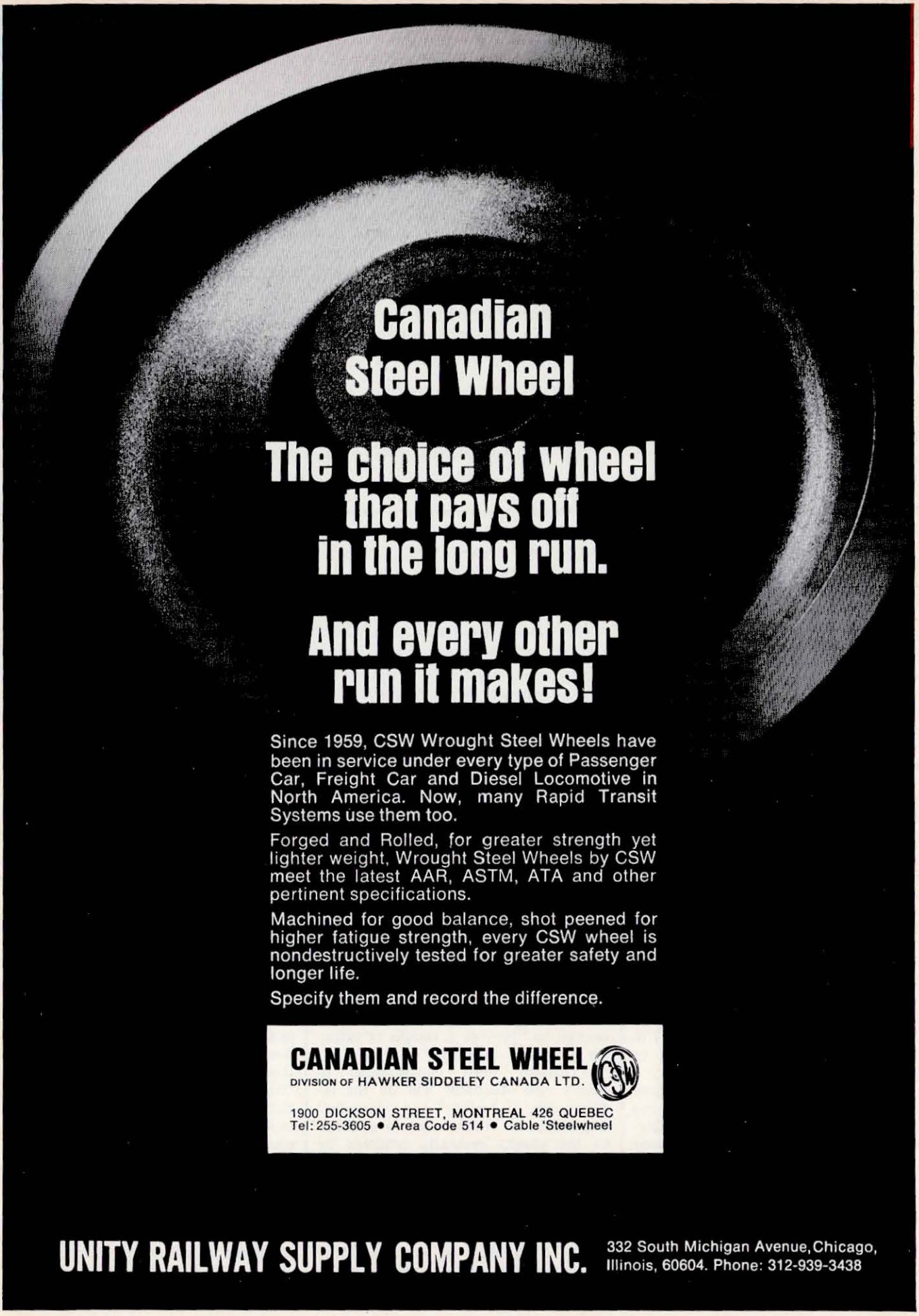
Canada's major railways are heading toward an all-time, one-year record for carrying freight. Despite the summer rail strike, the railways could wind up 1973 with the highest level of carloadings in their history. Statistics Canada reports that 198,700,000 tons of traffic were moved in 3,400,000 carloads by the railways in the first 10 months of this year—that was a 14.1% increase over the comparable 1972 period. Expectations are that the high level of activity will continue through the rest of the year.

PC OPERATING RATIO IMPROVES

Penn Central reports a net loss of $3,693,214 for October, on a fully accrued basis. That was $3,501,865 less than the $7,195,079 net loss for October 1972—which included an extraordinary credit of $1,355,557—and the least since bankruptcy except for June 1971. PC's operating ratio improved to 76.54% in October (the best for any month since bankruptcy), compared with 78.92% in October 1972. For the first 10 months of 1973 the net loss was $135,077,283, including an extraordinary credit of $16,453,071 resulting from settlement in June of the loan between Penn Central International N.V. and two leased railroad subsidiaries. For the first 10 months last year the net loss was $183,189,391, including an extraordinary charge of $17,979,057 resulting from Tropical Storm Agnes in June 1972. For the 10-month period of this year, the operating ratio dropped to 82.24%, down from 84.17% for the 1972 period.

MACHINE TOOL ORDERS ARE STILL HIGH

Machine tool orders during the first 10 months of 1973 reached a total that exceeded the previous peak order year, 1966, according to the National Machine Tool Builder's Association. (However, in constant dollars, said NMTBA, 1973 is still likely to be below earlier peak years.) Total machine tool shipments were also strong after 10 months—though not at record levels. The 10-month 1973 total was $1,202,100,000, which was 50% ahead of the total for the comparable 1972 period. During October, machine tool backlog reached $1,929,800,000.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Circle 5 on coupon page 59

Equipment safety standards go in Jan. 1

Finally the other shoe dropped last month as the Federal Railroad Administration announced that its Railroad Freight Car Safety Standards would be in effect on Jan. 1, 1974. More than a year after FRA had imposed its Track Standards, the second phase of increased Federal regulation under the Railroad Safety Act of 1970 was published by FRA.

Administrator John W. Ingram of FRA has pointed out that the new Part 215 in Title 49 of the Code of Federal Regulation contains "minimum Federal safety standards for freight cars including requirements. . .for inspection of cars before they are operated and the prohibition against and restrictions on use of certain equipment. . ."

FRA, said Ingram, "anticipates that these new safety standards will reduce the number of railroad accidents caused by defective freight cars and will. . . reduce the total accident costs to the industry." Contrary to some views, "FRA believes that the total costs, which the new standards should reduce, are appreciably greater than the expenses included in monthly reports of accidents submitted to FRA."

Total costs are not incorporated in railroads' reports, explained Ingram. "The accident reports normally include the dollar amount of estimated damage to equipment, track and roadbed, but not expenses such as overhead, cost of clearing the wreck, loss and damage to lading, or contingent expenses due to personal injuries."

Using reported accident cost figures, the only available basis of comparison, the derailments, collisions and other accidents resulting from rolling stock defects have been declining both in frequency and in total dollar cost. The number of equipment-related accidents dropped from 1,630 in 1971 to 1,577 in 1972 and the damages decreased to $31.2 million from $35 million.

Unlike the Track Standards, where no industry agreement existed on the limits of deterioration, the AAR Mechanical Division's Interchange Rules have long set standards for freight and passenger cars moving between lines. FRA chose to incorporate many of these AAR tolerances as the Federal wear limits. Both the AAR and the Railway Progress Institute, at the Car Safety Standards hearings 11 months ago, sought to show that FRA's adoption of many AAR limits in the Interchange Rules as safety limits would be unrealistic. It was stressed that many of the AAR's limits are intended to prevent unnecessary early return of cars to repair tracks and to permit orderly removal of worn components. The main point was that AAR requirements are not "safety limits," but are liberal enough to "provide a margin of safety for continued operation."

Probably most controversial in FRA's new standards will be the requirements of "safety" and "periodic" inspections of freight cars, in addition to the checks presently required by Interchange Rule and individual railroad regulations. The cost effectiveness of these new inspections has been questioned by both RPI and AAR.

After May 31, 1974, each car in a freight train must be given a safety inspection when the car is placed in the train. If a qualified inspector is not on duty at the point where the car is added, it is to be checked by available personnel for "conditions adverse to safe movement," and then is to receive a full safety inspection at the next point where there are qualified inspectors.

Starting in 1977, cars are to receive comprehensive periodic shop inspections to assure that suspension and draft systems are in compliance with the new standards. For cars in routine service, this will be at 48-month intervals. For "high utilization" cars (those specifically equipped to carry trucks, automobiles, containers, trailers or removable trailer bodies, or those assigned to a train which operates in a continuous round trip cycle between the same two points) the inspection interval will be 12 months.

Incorporated in the new equipment standards are requirements for maintenance and inspection of plain and roller journal bearings, and lists of prohibited components which will disqualify a car.

1974 to 1977: NINE DATES TO WATCH

Jan. 1, 1974. Railroad Freight Car Safety Standards become effective. Cars having prohibited components must not be used for transportation of hazardous commodities.

Jan. 31, 1974. Petitions for continued operation of cars over 50 years old and with certain prohibited components must be submitted to FRA.

Feb. 1, 1974. Prior to this date railroads must submit to FRA their instructions for safety inspections which are required by Standards to begin June 1, 1974.

March 17, 1974. FRA must notify railroads of its action on petitions for continued operation of over-age or restricted freight cars 45 days prior to prohibition which begins May 1, 1974.

May 1, 1974. FRA must by then notify railroads of approval or modifications in their safety inspection instructions. Restricted operation begins with cars over 50 years old and those having prohibited components.

June 1, 1974. Safety inspection required of each car in a train, given by qualified person in accordance with instructions approved by FRA. Program for bringing cars into compliance with requirements of Standards' periodic inspection requirements must be submitted to FRA.

Aug. 29, 1974. FRA must notify car owners of its approval or modifications of their periodic inspection proposals.

Jan. 1, 1975. Cars having prohibited components must be withdrawn from service.

Jan. 1, 1977. Periodic inspections are to begin. Inspections of cars in conventional service are to be conducted at 48-month intervals and high-utilization cars are to be inspected at 12-month intervals.

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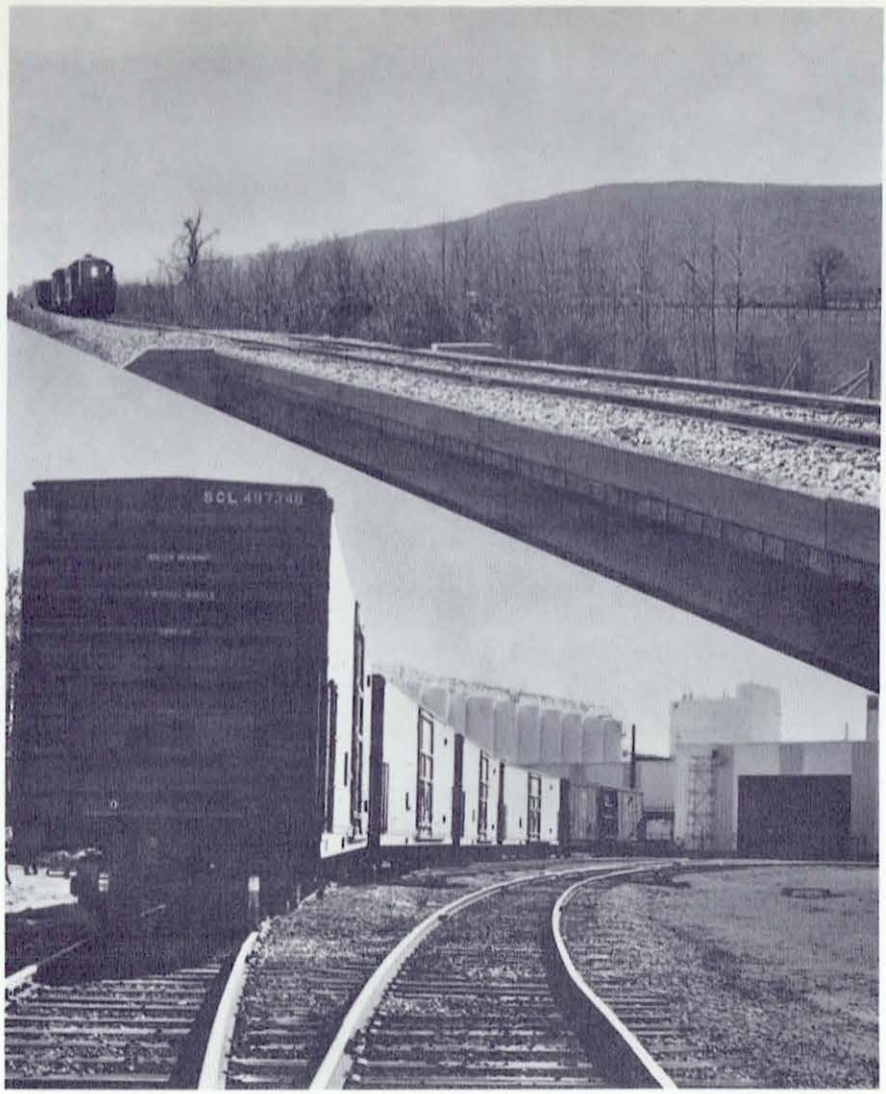

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DOT warming to Northeast bill?

It now appears likely that Congress will send to the White House some time before Christmas—Dec. 15 is the date most guessed at—a bill to restructure Northeast railroads (the House passed it as H.R. 9142). The Administration has been cool to the bill to the point of repeated threats of a veto. But there have been increasing signs in recent weeks that the Department of Transportation is beginning to warm up to the legislation.

In an address in Baltimore before a meeting of businessmen sponsored by the Railroad Community Service Committee, FRA Administrator John W. Ingram had nothing harsher to say about the Northeast bill than that "several aspects. . .are less than perfect." He emphasized that "the objectives of this bill are objectives that the Administration agrees with fully. In a nutshell, Congress will appropriate sufficient funds (probably on the order of $85 million—perhaps more, if needed) to provide interim funding for the continued operation of the bankrupt lines over the near future. The bill creates another Federal agency, this one called the Federal National Railroad Association, or Fannie Rae. Fannie Rae will, in turn, delineate those portions of the Northeast rail system that should remain in service and be incorporated into one or more private companies. Fannie Rae will take over the needed portions of the bankrupt lines, paying for them with stock of the new company or companies. The new companies, the Federal Rail Corp., will then operate the best parts of the bad system—and will make money doing it. It will be initially financed with $1 billion in government-guaranteed bonds. Creditors of the bankrupt lines will have stock in the new railroad, and that stock will have as much value as the stock of any solvent corporation can be expected to have."

Ingram added that this plan "does not dip deeply into the Federal till. It does not nationalize the railroads, which is the last thing you should want. Nationalized railroads in other countries lose money at an even faster rate than the privately-owned Penn Central ever has. Nor does the legislation 'bail out' anyone. It's not a giveaway—it's a rational solution."

As for DOT's "minor" objections to the bill, Ingram said: "You can be assured that we'll work closely with the conference committee after Senate passage if need be. But the main point is this: there is legislation aimed at solving the Northeast rail crisis. . . .I am optimistic about the future of railroads in this nation."

Watching Washington

R.M.M. McCONNELL

PC HAS A NEW PROBLEM

While the Senate was busy doing its part to find a solution to the Northeast rail crisis, the Penn Central—biggest and perhaps brokest of the bankrupt Northeast carriers—announced a new problem: PC needs $2.9 billion to bring its right-of-way up to standard. The staggering news was revealed in a Penn Central Transportation Company plan for restoration of track not now in compliance with Federal minimum safety standards (RA, Oct. 29, p.8). Submission of the plan to the Federal Railroad Administration was required, according to FRA spokesmen, under a limited interim waiver of the Federal Track Safety Standards granted the PC in mid-October.

Under terms of the waiver, Penn Central had to file a plan outlining the "most rapid possible restoration" to compliance with Federal standards of its tracks, figuring in the availability of manpower and maintenance equipment as well as of rails and ties. Railroad officials did not, however, have to pay attention to financial resources.

And they didn't. The report bluntly states that "to overcome present maintenance deficiencies and to reach a point where normalized maintenance would be required thereafter, it has been estimated that approximately $2,888,543,000 for maintenance-of-way expenditures and capital items will be needed over an eight-year period on the 15,000 mile core system, which would require the maintenance of 14,072 route miles and 33,234 track miles."

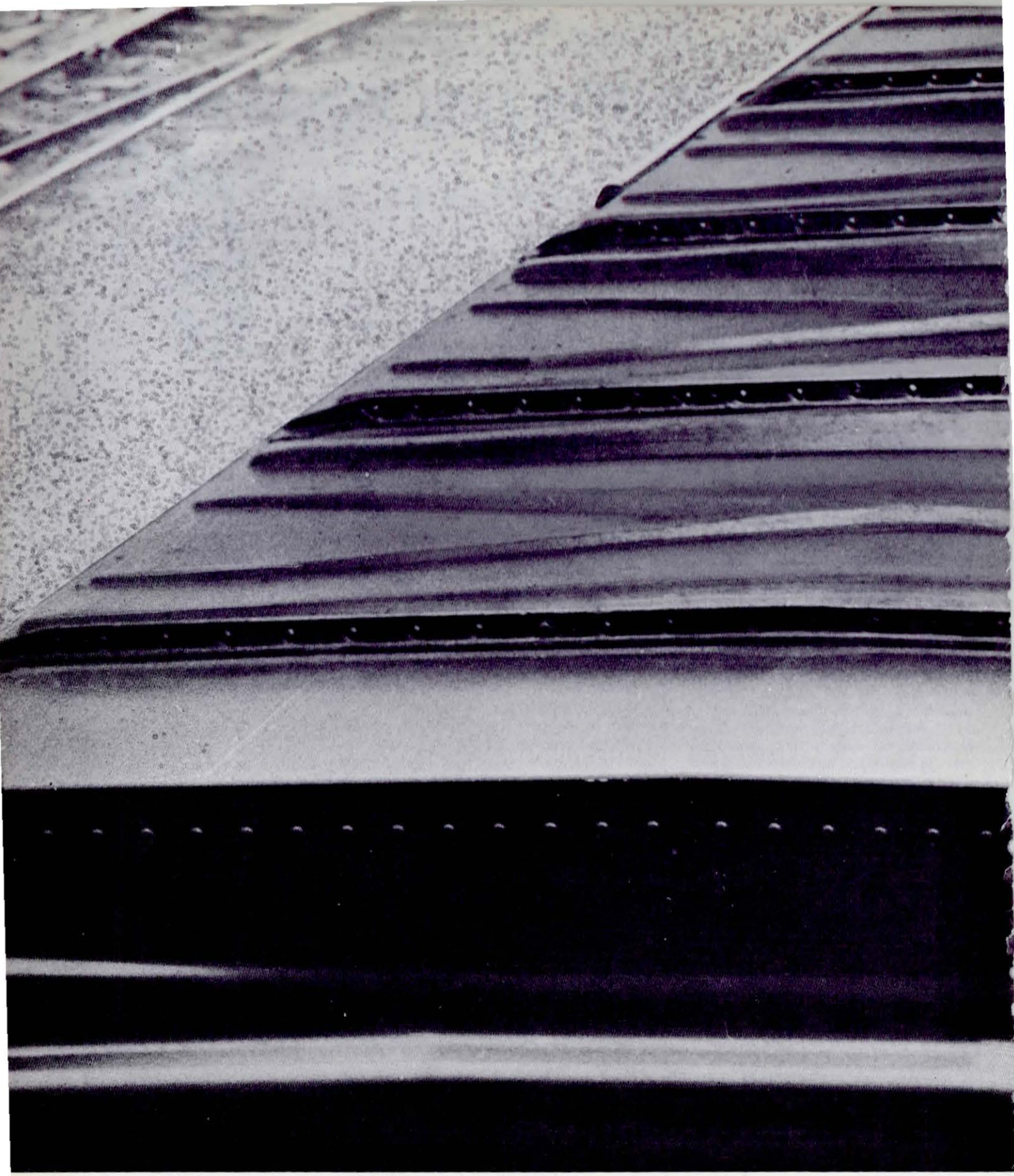
Moreover, things are rapidly going from bad to worse, the report pointed out. Even though Penn Central is replacing ties at an average installation rate of 1.6 million per year—importing foreign ties and using concrete and other wood-substitute materials—the tie-replacement program demands a crosstie service life of 70 years. The report acknowledges that "a 40-year tie life is the maximum which can presently be expected." In addition, operation of more than 6,000 miles of the Penn Central system on slow orders stemming from unsafe track conditions is pushing up operating costs, while simultaneously driving away business.

Penn Central's bad news comes at an inopportune time, to say the least. Speaking before the Senate Commerce Committee on proposals to solve the Northeast rail crisis, Transportation Secretary Claude S. Brinegar once again objected to the Shoup-Adams bill passed by the House as unnecessarily costly to the taxpayers. Disclosure of the new Penn Central figures could make his argument a lot more forceful.

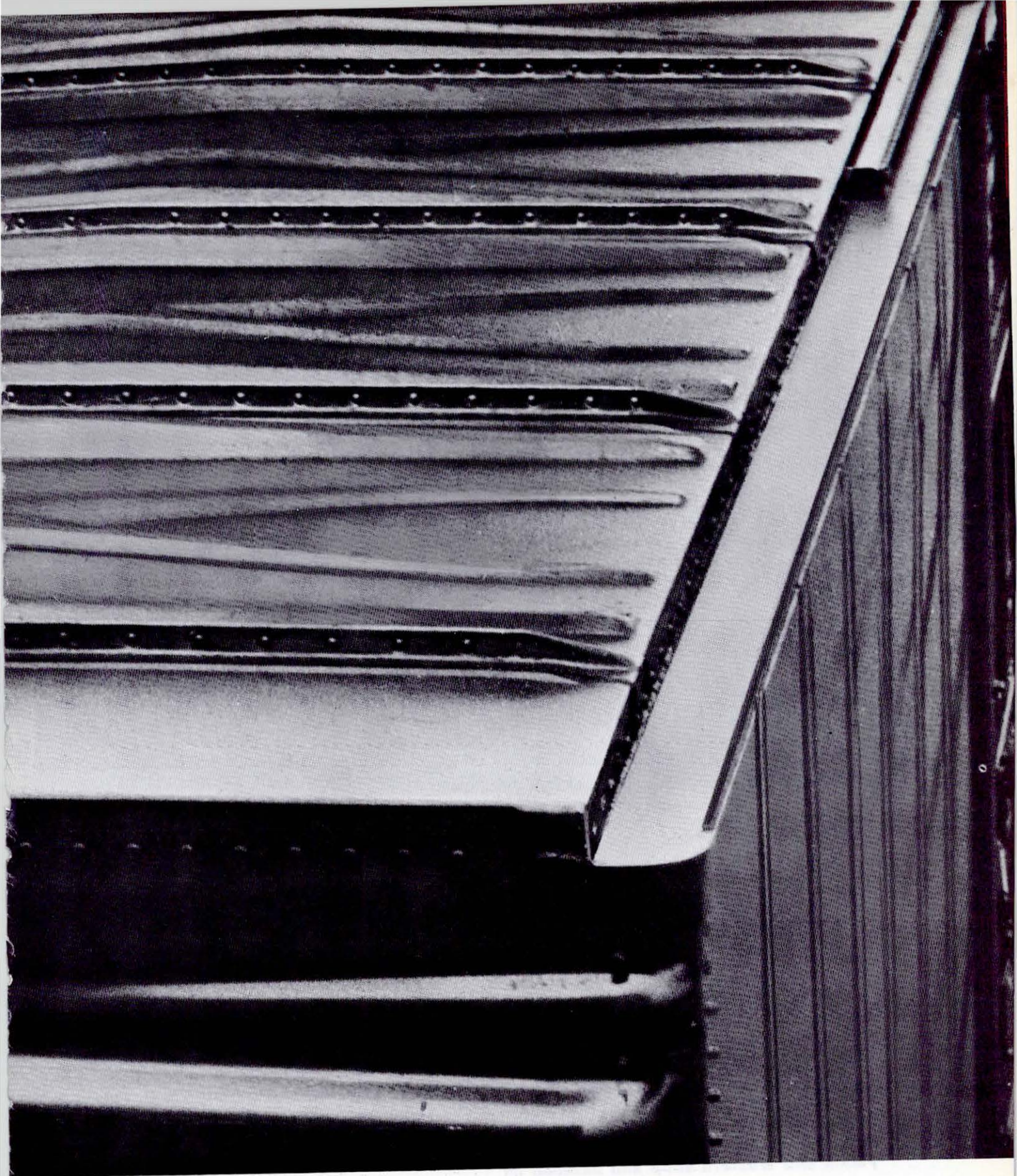
FRA STABBED IN THE BACK?

At the same time, the Penn Central announcement was greeted as something of a stab in the back at the FRA. As an FRA statement put it:

"In its original petition, in which the Penn Central requested relief from the safety standards, the railroad claimed the 6,901 miles of track it then identified as below minimum safety standards could be brought into compliance at a total cost of $49 million. FRA Administrator John W. Ingram expressed dissatisfaction with the estimates set forth in the latest proposal."



Stanray roofs handle a lot of stress with very little strain.



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Lines on Labor

GUS WELTY

FOOTNOTE TO "DON'T FIRE HIM. . ."

Not so many months ago (June 25, to be exact), these lines-on-labor appeared under the headline "Don't fire him—help him," and the column talked about railroad-industry efforts to help the problem-drinker—most specifically those pioneering efforts of the former Great Northern which have been picked up by Burlington Northern. The column produced a few nods of approval, and a heart-warming letter from a long-time top officer in the industry in which he observed: "What a wonderful thing it would be for everybody to use your expression, 'Don't fire him—help him.' " Still, it would have been easy to file the story away, categorizing it as a column written during a period when there was no "hot" news breaking. God-bless, however, the railroad industry doesn't permit filing it away. Norfolk & Western has now set up an alcoholic rehabilitation center as part of its medical department. As Dr. Robert W. Edmonds, medical director, put it: "We feel it is our social responsibility to help curb the high incidence of this disease and to help salvage the lives involved." And in late October, Illinois Central Gulf President Alan S. Boyd announced the early-on start-up of a joint labor/management employee-assistance program designed "to assist employees who may develop alcoholism or drug problems to help themselves before the condition destroys job capability and to do this without disturbing normal disciplinary and grievance procedures." Boyd, by the way, paid tribute to the "missionary efforts of the program on BN, to the programs in existence on Seaboard Coast Line and Duluth, Missabe & Iron Range and Canadian National, and to the recently-inaugurated programs on Milwaukee Road and Union Pacific."

If anything written here had even the slightest bearing on the expansion of efforts like these to more railroads, that's great. If the whole thing is simply a matter of all-concerned recognizing an idea whose time has come, well, that's great, too. The important thing is that more programs like GN/BN's are being set up.

AND A FOOTNOTE TO ICG'S TRAGEDY

In that same October presentation (before the National Safety Council), Alan Boyd also touched on the year-earlier commuter-train accident in which 45 persons died. While praising the efforts of investigating teams, he noted that still "we know too little about the human elements of calamity." And he offered these observations: "We run the risk of potential accident recurrence, however failsafe we design and redesign our systems and operations, so long as we do not focus constantly upon the human dimensions involved in operations. In saying this, let me assure you that I do not foresee a sliderule to measure behavioral patterns. Nor do I think that we have the time to become behavioral psychologists or sociologists. What I am saying is that, until such time as our society and medical researchers become more adept at monitoring behavioral patterns, there is no substitute for the line supervisor being close to his people—close enough to detect personality changes, behavioral quirks or deteriorating job performance."

Line supervisors being close to their people? Amen and right on. In fact, it's hard to imagine what single element could be more vital—in terms of safety, of performance, of employer/employee relations, of. . .whatever.

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We designed an outside post car to do anything an inside post car can do, and with superb versatility. We eliminated the need for wood lining. And we went much, much further in developing a car with the lowest possible maintenance cost.

The result is a new level of simplicity and quality in a box car, expressed in a choice of sizes and arrangements to meet customer-oriented requirements. It is introduced with complete engineering analysis, from the only company to publish such figures. With its versatility in meeting virtually any shipping requirement, the new Pullman-Standard box car becomes the new flagship for America's freight car fleet.

Pullman-Standard

13 ways new. 13 ways better.

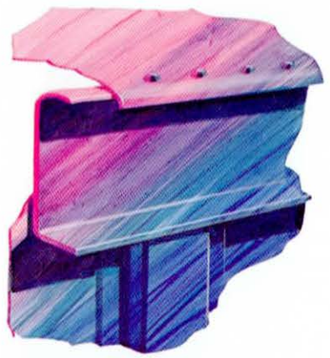
The new Pullman-Standard box car is not just an improved box car, it's a new box car with 13 major new features throughout. Features that add new strength in their respective areas. Features that together contribute to a completely new milestone in strength and quality.

New side sill and reinforcement. It's a new side sill. A 6″ x 3½″ x 5/16″ thick rolled angle. The new side sill reinforcement is a 15″ deep angle 5/16″ thick, and extends from end sill to end sill. In addition, the new wider side posts extend well below the side sill and onto the side sill reinforcement itself, giving increased lateral strength to the side.

This carefully engineered new design has resulted in a much stronger box car side construction.

New side posts. The box car side is the major structural and longitudinal load-carrying member, and the new Pullman-Standard box car employs a totally re-engineered side, including new, wider, deeper hat-section side posts.

Two inches wider than former posts, the new posts are also 137% stronger. As a result, the new side requires only ten side posts, instead of twelve.

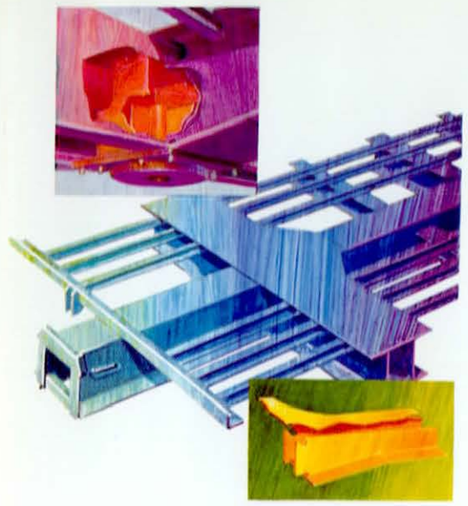


New side plate. Until now, the "ZU" side plate has been the standard of the industry for outside post box cars. The design advantage was that it permitted riveting the roof outside the cargo area.

The new Pullman-Standard side plate is a roll-formed "C" section which provides the same riveting advantage. It is 5/16″ thick high strength steel and is 21% stronger without reinforcement than the old "ZU" side plate with reinforcement. The new design also eliminates the need for reinforcement in on-center doorway areas up to 16′ wide and 10′4″ high, allowing the side plate to be uninterrupted for its entire length.

New corner post and end construction. The completely redesigned corner post is now a ¼″ thick "J" section pressing combined with a 3″ x 3″ x ¼″ thick angle to form a rugged box section. The new design is of high strength steel and 273% stronger than the old design!

To take full advantage of this new strength, engineers selected a two-piece, seam-welded end as standard. Stronger than the old design, the top sheet is 3/16″ thick open hearth steel, and the bottom sheet is ¼″ thick steel of the same type. Corrugations are a full four inches deep for their entire width and continuously welded to the box-section corner post and steel angle end sill, to take optimum advantage of the new strength.



New underframe. The underframe of the new Pullman-Standard box car has been significantly redesigned. The structurally excellent qualities of the cross-bearer have been retained in a new single contour design that permits construction efficiencies, including the more efficient installation of nailable steel flooring. Stringers are now in line, providing more even floor support over the length of the car, with inboard and outboard 4″ stringers being uninterrupted sections from bolster to bolster, increasing strength and load-carrying capacity.

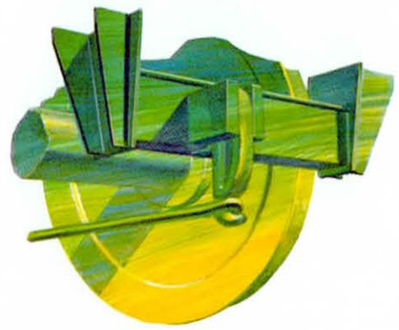
The new profile bolster web smoothly transfers stresses from the center sill to the truck side frame, reducing stress concentrations.

The center filler is of a new welded design, providing greatly improved strength. The center filler assembly installation is carefully controlled for levelness before welding, to assure close tolerance contact with the center plates.

The bolster bottom cover plate is universal mill edged, avoiding the stress concentrations of shear-cutting which contribute to low temperature brittle fractures.

New forged front draft lugs. Fabricated draft lugs of welded steel have been replaced by key slot liners and front draft lugs of forged steel. This design takes optimum advantage of metal strength, producing a continuous "grain flow" to follow the shape of the part, and resulting in greatly increased strength.

New brake arrangement. Among the new safety devices and lading protection features is the adoption of Pullman-Standard's under-the-axle hook-and-eye arrangement. This design is more efficient, provides for a safer brake rod and lever application, and helps eliminate binding between rod and levers when the car is negotiating a curve.



New door post. Because of high abuse factors from lift trucks, the open hearth steel door post has been replaced. The new door post is stiffer, made of high strength, low alloy steel, and is 92% stronger.

More dramatic differences. These include a versatile base interior design which can be easily adapted to a variety of lading restraint devices, new wider sill steps, improved grabs for greater safety, and new, easily accessible, external jacking pads.

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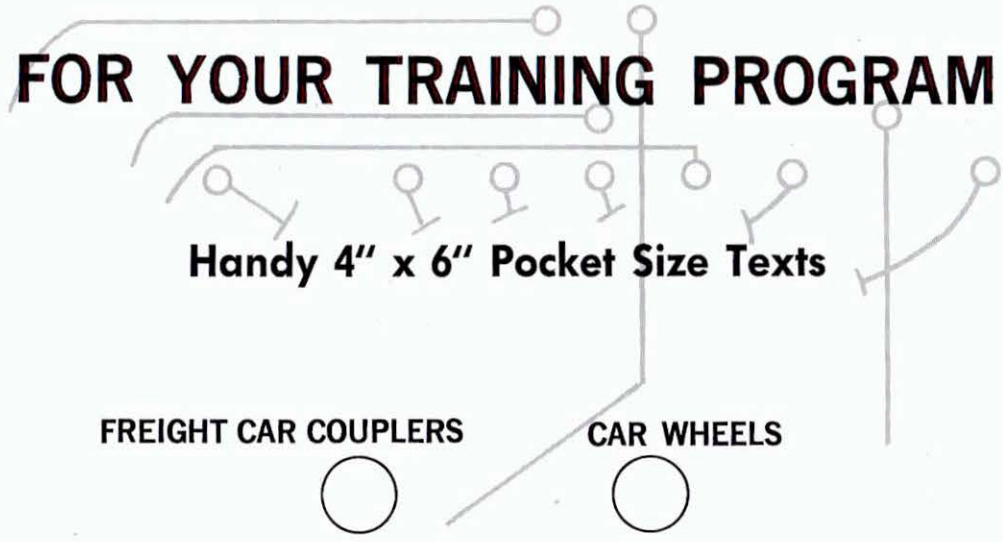

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Railway Educational Bureau

Guardians of the environment,

conservers of energy

By GUS WELTY, Senior Editor and
ROBERT D. BARTLEY, Associate Editor

On the doors of every Chicago police car, there appear the words "We serve and protect."

Railroads might be smart to stencil on the sides of every locomotive cab something similar—such as "we protect and conserve."

Why? Simply because in these days of (1) environmental concerns and (2) energy concerns, one fact stands out: Among the major forms of transportation, nobody does a better total job of (1) environmental protection and (2) energy conservation than a railroad.

True, there is something awesome about a jet trail stretching across a cloudless sky. And there is something awesome about a giant barge tow shoving aside the waters of the mighty Mississippi. And there is something awesome about a massive highway double-bottom barreling down the Interstate.

But for transportation economy and efficiency—for all of that in the context of environmental protection and energy conservation—there is something pragmatic about a railroad.

To borrow an advertising slogan from the natural-gas people, railroads do indeed do the big jobs better for less.

To an extent, this is recognized in the highest councils of government.

● **"Trends and events."** When he signed the Amtrak Improvement Act of 1973 last month, President Nixon noted that "Emerging trends and international events. . .have increasingly dramatized two additional dimensions of the national interest in enabling—and indeed encouraging—our people to choose a train when they make travel plans. Those dimensions are energy conservation and protection of our environment." Railroads, Mr. Nixon pointed out, "can carry more passengers over greater distances per gallon of fuel than automobiles or airlines are able to do, while adding fewer pollutants to our air. With our oil resources becoming increasingly precious, not just this winter but for some years ahead, the energy efficiency of rail travel is an especially compelling argument for expansion of appropriate Federal assistance to Amtrak."

A few days later, Federal Railroad Administrator John W. Ingram added the freight-service aspect to the President's message. There's no question that railroads use less energy for the amount of service provided than other modes of transportation, Ingram declared: "At this critical time, when we face a possibility of fuel rationing, it is disheartening to see just how under-utilized the railroads are. . .The rail system is in place. Considerable additional volume can be handled with very little expansion of plant or equipment."

(In his special energy message to the nation Nov. 25, President Nixon made no mention of railroads—which may be taken as a good sign. Because when he did mention other carriers—the truck lines and the air lines—it was with reference to the restrictions that his fuel-conservation proposals will have on their operations during the period of the shortage.)

In the meantime, the Department of Transportation was making new studies of energy consumption. Drawing in large part on data previously developed, DOT came to its conclusions late in November: On the basis of averages, energy intensiveness was pegged at 450 Btu per ton-mile for oil pipelines and 680 Btu for water carriers (both of which are somewhat limited in the range of commodities carried). For railroads, the figure was 670 Btu. For trucks, it was 2,400 Btu, or almost four times the railroad average. For air carriers, the most efficient still checked in at 27,000 Btu (for all-cargo carriers) and the average for all certificated carriers was an astronomical 67,532 Btu.

> In the present crisis, railroads emerge as the "good guys." But there's some question as to whether good guys always finish first.

The figures should not have come as a surprise. But, while they point to an obvious course of action in the event that fuel is to be rationed among transportation modes, it remains to be seen if the inherent advantages of the railroad mode will be fully recognized.

● **Energy vs. . . .** All the attention paid to energy, however, seems only to be making environmentalists dig their positions deeper. Among the most far-out, it's almost taken-for-granted that the energy crunch is some kind of gigantic ruse—under cover of which more nuclear power plants can be built, more high-sulphur coal can be burned, more coal-stripping will be permitted, and an Alaskan pipeline can be constructed.

But, while the energy people and the environmental people are fighting it out, there's one point that really should not be overlooked: The railroad is as good at guarding the environment as it is at conserving fuel supplies. Further—a point that should make both sides happier—the railroad is also the key to the logistics of getting low-polluting low-sulphur coal from the points where it's mined to the points, often many hundreds of miles away, where it's burned.

And then there is, of course, the dollar point—the fact that railroads have spent tens of millions of dollars in air- and water-cleanup efforts. To be sure, some of these efforts have come at the point of a law or an ordinance. But, despite the fact that dollars are hard to come by—and despite the fact that there is precious little return-on-investment in anti-pollution projects—railroads have for the most part gone along, challenging none but the most ridiculous, the impossible demands of the environmentalists.

Nobody but the original Pollyanna would pretend, at this point, that railroads are not facing more hard-times, on both the environmental and the energy fronts. In the areas of air- and noise-pollution, especially, railroad people are well aware that restrictions can go beyond the capabilities of available technology to meet those restrictions. In the energy area, railroad people are also well aware that fuel supply is only half the problem—with fuel prices making up the other half. And, in what may come close to being the ultimate irony, there is the area of plant rationalization—with new challenges to much-needed track abandonments, in and out of court, on grounds that the trucks taking over what little traffic there may be on a money-losing branchline will pollute the atmosphere more than the railroad. If ever there were a case of the good guys being penalized for being good, that may be it.

● **The 1940s, over again?** In a way, some aspects of 1973 are reminiscent of the early 1940s—such aspects as increasing transportation demand in the face of fuel shortages, for example. Railroads, in those World War II days, did a job of handling traffic that wasn't surpassed until just recently. Railroads could do that kind of job again—and at the same time protect the environment. They could do it—if they're given the opportunity. FRA's John Ingram calls himself a "confirmed advocate of using that mode of transportation which does the job best and most efficiently." From the standpoint of energy and the environment, too, that's not a bad statement of national transportation policy.

What is it that casts railroads in the role of the "good guys"? This Railway Age Special Report spells it out.

A Southern Pacific freight crosses Bayou Ramos near Morgan City in southern Louisiana.

Railroads beef up spending on environmental programs

Suddenly, the energy crisis has come along to nudge the environmental crisis out of the front page headlines. However, while public "heat" may be off them—at least for the moment—the nation's businesses and industries, including the railroads, are continuing to funnel time, talent and cash into projects aimed at making our natural environment safer and healthier.

The railroads spent nearly $92 million last year on environmental programs. Total expenditures for this year won't be tabulated until March 1974, according to James R. Coxey, assistant to the vice president and manager-environmental studies division of the AAR's Research and Test Department, but they're expected to be up substantially. Stepped-up environmental programs on individual railroads, plus new Federal controls, are sending expenditures up. Furthermore, they're expected to remain at a high level in the years ahead.

● **Keeping the right-of-way clean.** Actually, the railroads were one of the nation's very earliest practitioners of environmental controls on an industry-wide basis. They had to be. Without weed and brush control along their rights-of-way, railroads would be choked to a standstill. Not surprisingly, of the $92 million spent last year for environmental programs, the largest single cost item was weed and brush control, over $20 million. Of course, environmental protection zealots would hardly term such a program an altogether altruistic one.

Aside from their weed and brush control program, the railroads have been pretty much like any other business or industry so far as the environment is concerned. In the days before sharp-toothed Federal regulations came along, railroads didn't demonstrate any particular concern for the environment, nor did anyone else. The Clean Air Act of 1963 didn't mean too much to anyone except perhaps the handful of sign-carrying environmentalists seen from time to time on TV. The Federal Water Control Act of 1956 was equally obscure. As far as noise was concerned, nobody knew much about it and therefore no attempt was being made to control it.

But then, on the last day of 1970, the Federal government enacted the Clean Air Act Amendments of 1970, and the stage was set for much stronger enforcement of the laws governing what could and couldn't be huffed and puffed into the air. Next, the Federal Water Control Act Amendments of 1972 were signed into law, and suddenly environmental control officers were taking beakers of industrial effluent back to the laboratory for test, and threatening violators of the law with severe fines or imprisonment.

Last year, steps were taken to bring the third major form of pollution—noise—under control with the passage of the Noise Control Act of 1972. This act is different from the others in many ways. And noise regulations for railroads have been especially difficult to draw up. As an example of the difficulty being encountered, deadlines set for promulgation of noise regulations for the railroads have been missed a couple of times.

Regulations for motor carriers, aircraft and railroads were to have been available on July 27, 1973. Only those noise regulations for the motor carriers and aircraft made the deadline. The Environmental Protection Agency sought—and was granted by Congress—permission to extend the deadline for railroad noise regulations to Sept. 27, 1973. Shortly before the arrival of the new deadline date, the EPA again sought a new deadline, one that would add at least another month to the preparatory time for drawing up the regulations.

Over $1 million have been spent by the railroads, the EPA, the Department of Transportation, and the National Bureau of Standards to make possible promulgation of regulations that will meet the intent of the Noise Control Act, advises Coxey. It's been a big job, with mountains of information to sift through. Since the effective date of the regulation comes along 90 days after the promulgation date, there is no chance that the regulations will be in force this year.

● **Federal vs local regulations.** The railroads are as anxious as anyone to have the Federal regulations go into effect. Until they do, thus establishing Federal preemption, the railroads must comply with state and local noise regulations. Some of the non-Federal regulations are ridiculous, adds Coxey, and they're often-times very poorly thought-out.

Partly because of the interstate nature of their business, the railroads are far better off directing their efforts for controlling their environment to meet standards established by one agency—a Federal one, in this case—rather than try to satisfy the demands of several smaller local agencies. This holds true for air and water pollution controls as well as those for noise.

Unfortunately, unlike the Noise Control Act which provides for Federal preemption, the Clean Air Act and the Federal Water Control Act do not preempt state and local regulations. Thus, air and water regulations in one state can differ drastically from those in a neighboring state. An interstate carrier, such as a railroad, must always be alert to these local mandates.

● **A good track record, but—.** When it comes right down to it, complying with all the environmental regulations, whether they be Federal, state or local, isn't as difficult a task for the railroads as it is for other commercial freight carriers. Take the air we breathe, for example. Less than ½% of all the smoke that's exhaled by business, industry, the general public, and so forth, comes from the railroads' diesel engines. Railroads pollute the air less than one-fifth as much as trucks.

Last year, the railroads spent almost $2.7 million for the control of smoke emissions from diesel-electric locomotives. Here again, these expenditures were not all that altruistic. A smoking locomotive, aside from being a polluter, is an inefficient piece of equipment. If overhauled, it will probably stop smoking and also do a far better job for the railroad.

Despite their relatively good track record, railroads still undergo a certain amount of harassment from clean air enthusiasts. A device called the Ringelmann Chart is used to grade the density of smoke. A highly subjective device at best, it can cause all kinds of problems for the railroads when in the hands of amateur environmentalists. More than one railroad has been hauled before a local clean air agency to explain a "No. 2 Ringelmann" detected by a local ecologist when the morning hotshot passed through town.

The AAR's Research and Test Department embarked upon a search almost two years ago to find a better technique of measuring smoke emissions from locomotives. Today, not one, but three techniques, and three smokemeters, are available to do a much more accurate job.

Another $13.5 million was spent by railroads last year to bring smoke emissions from stationary smoke stacks

RAILROADS' ENVIRONMENTAL PROGRAMS

	Million $
Weed and Brush Control	20.2
Maintenance Shops Pollution Control	16.6
Emission Controls-Stationary Stacks	13.4
Roadside Fire Control	11.1
Fuel Oil Separation from Drainage	9.1
Crosstie and Timber Disposal	6.5
Human Waste Disposal	4.8
Locomotive Emissions Control	2.7
Fluids Disposal-Tank Cars and Cleaning Operations	1.5
Cleanup-Derailments and Other Spills	1.2
Community Waste Disposal	1.1
Dust Control-Open Top Cars	1.0
Car Disposal	.8
Disposal of Public Debris on Rights-of-Way	.8
Noise Pollution Control	.6
Engine Coolants Disposal	.5
	$91.9

These are 1972 figures. This year's investment will be substantially higher.

under control. It is estimated that the cost of similar emission controls on the railroads this year will run about $6.5 million. The future here will depend to a great extent on technological developments in the coal industry, on the easing of certain mining restrictions and on the availability of funds for coal research.

● **Spark control.** In addition to smoke, sparks can also exit from a diesel engine via the locomotive's smoke stacks. Sparks can also come from brake shoes. Railroads have active research programs in both these areas, seeking the types of controls of sparking that will eliminate chances of way-side fires.

Engine sparking is an indication of inefficient combustion, so here again, the railroads, as well as the environment, stand to benefit considerably through the development of good controls. Improved filters have been developed to aid combustion efficiency. Maintenance practices are being monitored closely. Effective spark arrestors have been designed for the types of engines that require them. As conscious as anyone of the need to preserve our forests and natural resources, the railroad industry is spending millions each year to prevent and control engine sparking.

Since brake shoes represent one of the biggest cost items on the railroads today, they're constantly under investigation by researchers seeking greater efficiency and, more importantly, better safety. Thermodynamically, the cast iron brake shoe is probably the best performer of all the types of brake shoes marketed to the railroads. But, it sparks. And it often screeches, which upsets those who are interested in controlling noise pollution.

Composition brakes shoes are getting widespread use on the railroads, and while their cost is almost double that of the cast iron shoes, they spark less and screech less. Railroads feel they're worth the higher expenditure if they'll reduce the fire hazard.

Wayside weed and brush control is of course, another way for the railroads to reduce fire hazards. Unfortunately, a very effective herbicide which kills weeds and unwanted brush before they emerge has come under fire by the EPA. Called 2, 4, 5-Trichlorophenoxyacetic acid, and used widely by the railroads and the U.S. Forestry Services, this herbicide is currently under intensive investigation to determine whether it may be harmful to human life.

Railroads are vitally interested in the outcome of a hearing on 2, 4, 5-T that's scheduled for April 1974. They're continuing to use the chemical in the meantime, but will cease to use it if information developed for the EPA hearings indicates that an impurity in the herbicide could be a causal factor in cancer and birth defects.

To further improve their relationship with the environment, railroads have been searching for ways of transporting such things as sand and coal in open top hopper cars without having dust blow about. Shippers are being urged to use sprays to control the dust, and car tops which could be opened and closed automatically at loading and unloading terminals are also under study. With the energy crisis shoving coal back into the limelight, dust controls are becoming extremely important.

● **Litterers create problems.** Something that seems to defy solution is the problem the railroads face in trying to keep their rights-of-way free of litter and junk put there by the general public. Despite community relations programs and other educational projects aimed at discouraging indiscriminate dumping along railroad property, about $750,000 was spent last year to haul away debris.

Being forced to haul away somebody else's unwanted junk has to be a bitter experience for the railroads because they have enough problems trying to dispose of their own debris, expecially crossties. Prevented by the Clean Air Act Amendments of 1970 from burning the 25 million crossties they scrap each year, railroads must find other means of disposal. It's no easy task, and it's expensive, costing $6.5 million a year.

The search is on for ways in which the waste ties can be put to some beneficial use, but no universal solution to the problem has been found. In some instances, the crossties have been used for architectural projects and for landfill. Sanitary landfills, however, don't want them because they occupy too much space. Crossties are costly to haul away, they can't be economically reconstituted into hardboard, no chemical has been developed yet which will dispose of them easily and quickly, and they can't be simply left along the rights-of-way because they are unsightly and, besides, at the rate they're removed each year they'd soon occupy every available foot of ground.

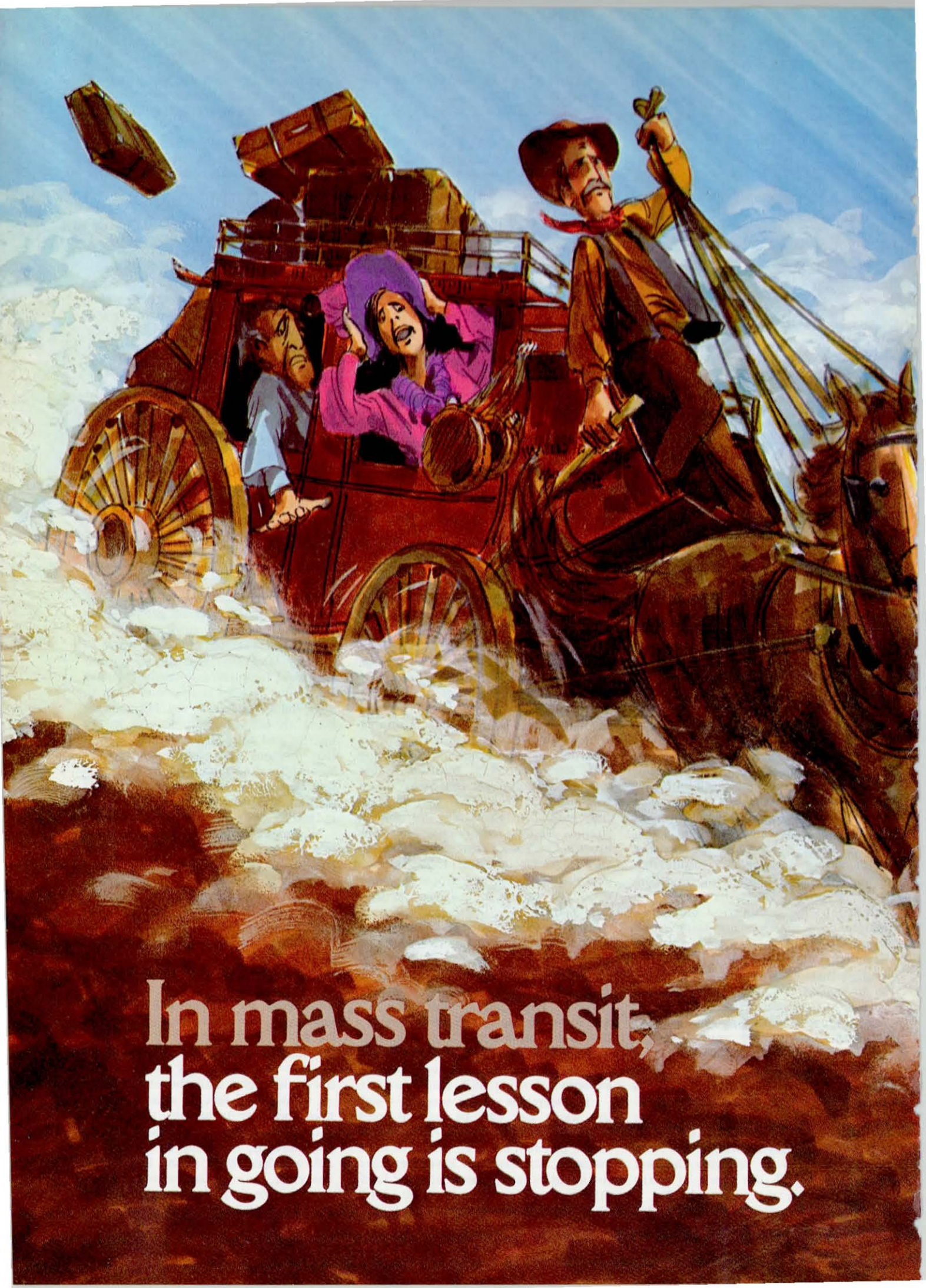
Like old crossties, old freight cars are also difficult to dispose of, especially when burning is prohibited. The traditional burning method of disposal has given way to other methods which frequently involve hand dismantling and the hauling away to a landfill of the burnable portions of the car. The added cost to the railroads is about $3/4 million a year.

In complying with the regulations of the Federal Water Control Act Amendments of 1972, railroad maintenance shops and rail yards are facing up to many new added costs. Locomotive coolants can no longer be freely dumped on the ground where they may eventually flow away into a waterway. Railroads are now capturing the coolants, filtering them and re-using them. Still, this particular environmental program is costing the railroads about $½ million a year.

Maintenance shop waste and debris are about as difficult to get rid of as crossties. Railroads spent about $18 million last year to haul shop waste to sanitary land fills. Another $9 million was spent for automatic shut-off devices for fueling systems and for fuel clean-up after spills. Needless to say, railroads are going to be very, very careful in the months and years ahead to make certain that precious fuel pours only into the locomotive fuel tanks. It can be expected that close monitoring of fueling stations will surely cut down on the industry's clean-up costs in the future.

Railroads are already deeply involved in a program for fitting various rail cars and locomotives with toilets that meet regulations established in June 1971, by the Food and Drug Administration. Human waste material can't be discharged from rail equipment unless it has been suitably treated. Starting in July 1972, all new equipment was required to be outfitted with johns that would meet the regulations, and a retrofit program for all other existing equipment must be completed by the end of 1974.

Railroads really haven't encountered all that much difficulty in learning to live in harmony with the environment. As a matter of fact, if other forms of transportation—including the family automobile—were doing as good a job as the railroads, or trying as hard as the railroads have been trying in the past few years, concern for the environment would never again become a front-page story in the daily newspaper.


In mass transit,
the first lesson
in going is stopping.

When you teach your kid to drive, one of the first things you point out is the brake. Right? It's sort of like putting last things first—or near the top of the leap.

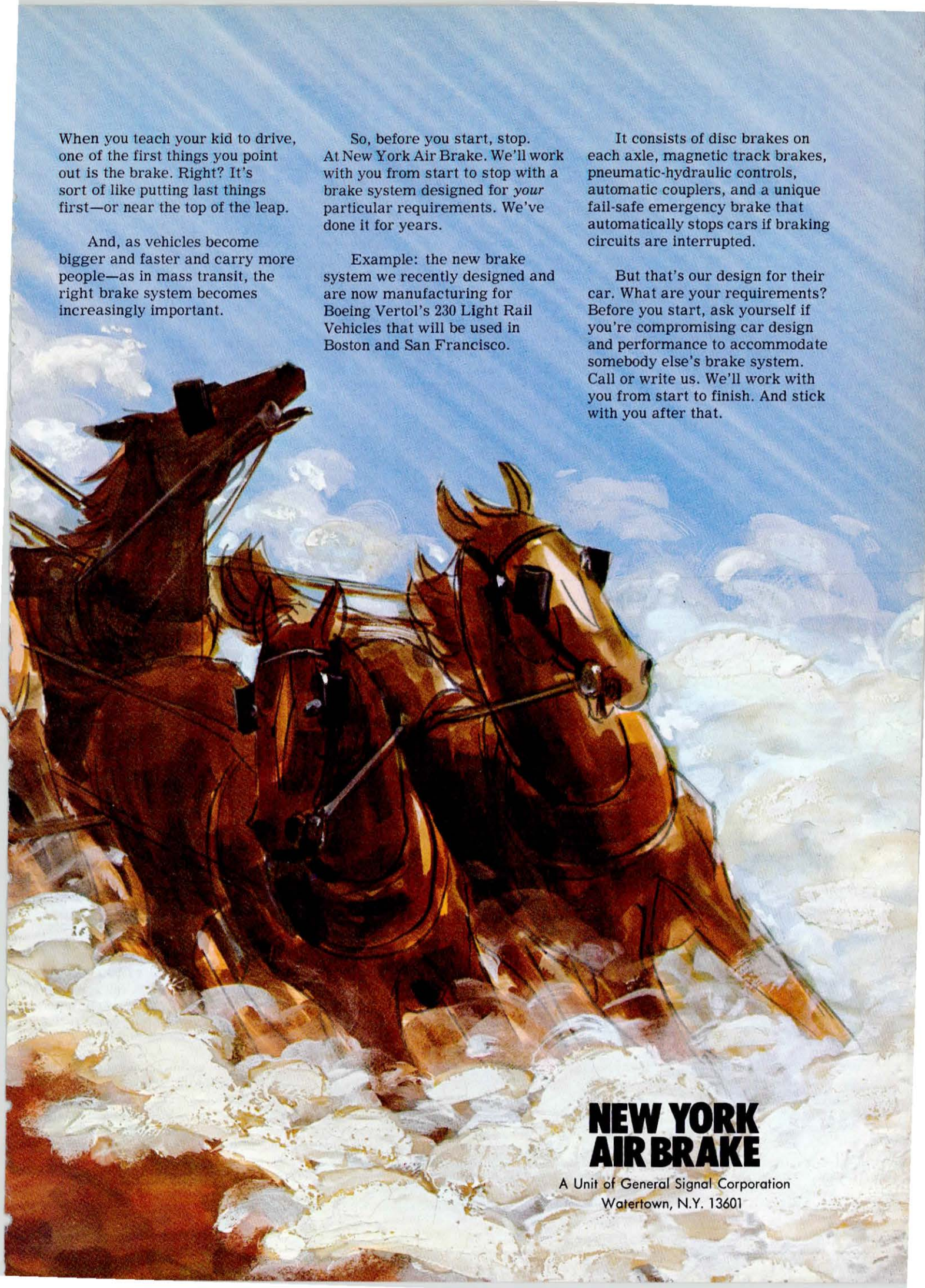
And, as vehicles become bigger and faster and carry more people—as in mass transit, the right brake system becomes increasingly important.

So, before you start, stop. At New York Air Brake. We'll work with you from start to stop with a brake system designed for *your* particular requirements. We've done it for years.

Example: the new brake system we recently designed and are now manufacturing for Boeing Vertol's 230 Light Rail Vehicles that will be used in Boston and San Francisco.

It consists of disc brakes on each axle, magnetic track brakes, pneumatic-hydraulic controls, automatic couplers, and a unique fail-safe emergency brake that automatically stops cars if braking circuits are interrupted.

But that's our design for their car. What are your requirements? Before you start, ask yourself if you're compromising car design and performance to accommodate somebody else's brake system. Call or write us. We'll work with you from start to finish. And stick with you after that.



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The energy sweepstakes: Railroads are easy winners

The energy crisis is doing strange things. For one, it has a once-complacent public taking a second look at the nation's railroads, which is what the railroads have been pleading with them to do for years and years.

The railroads could, in fact, bail this country out of the fuel shortage jam it is now in and which it probably will continue to be in for a long, long time. Purely and simply, the railroads are more efficient and more flexible in the work they can do and places they can go than other forms of transportation. This is no hollow statement; the facts are there to back it up.

● **The evidence.** Several research organizations, and individual railroads themselves, have conducted tests to determine which forms of transportation make the most efficient use of fuel. Battelle's Columbus Laboratories made a study for the AAR in 1972 to determine the energy requirements for the movement of intercity freight. Here are the results:

	Fuel Btu per net ton-mile	Net ton-miles per gallon
Line-Haul Railroad	500	280
5-Axle Heavy Duty Diesel Highway Truck	1800	77

In another study, Missouri Pacific's Traffic Research Division sought to identify the Btu requirements on the average to move a ton of freight one mile by rail, motor carrier, and water. The results:

	Btu per Net Ton-Mile
Rail	536-791
Barge	540-680
Motor	2,518-2,800

In arriving at its Btu energy requirement figures, Battelle engineers first determined the energy requirement estimates based on tractive energy. They found that motor trucks needed four times as much energy in moving gross ton-miles of freight as did the railroads. Furthermore, the gross vehicle ton-miles per net freight ton-mile came out to 2.35 for the railroads, 2.15 for motor trucks. Next, two additional factors were determined: (1) fuel heating value, and (2) average engine brake specific fuel consumption. Ultimately, they arrived at the values shown above.

Other figures have been developed that show clearly that railroads are more efficient than other modes of transportation. For example, nine times as much energy is needed to move a passenger by plane as by high-speed train. The energy productivity of air carriers is very poor, compared with other modes. All-cargo planes, which are the most efficient of all air carriers, average 27,000 Btu per ton-mile, compared with rail's average of 670; trucking's 2,400; and water carrier's 680. Helicopters have by far the poorest average, 187,000 Btu per ton-mile.

Since the nation could be on the verge of suffering what Secretary of Transportation Claude S. Brinegar calls "a 15-20% oil shortfall" due to the Middle East conflict and other problems, steps must be taken to conserve fuel of all types. President Nixon has urged people to lower their thermostats and cut their automobile speeds; industries and utilities have been served

Fuel Consumption by Mode of Transport

Class I Railroads	1966	1967	1968	1969	1970	1971
Locomotives						
Diesel Oil, gals X 10^6	3,920	3,883	3,917	3,919	3,804	3,819
Fuel Oil, gals X 10^6	65	47	42	33	—	—
Electricity, KWH X 10^6	922	832	750	610	578	534
Coal tons	3,235	2,310	1,669	1,137	1,238	1,191
Motor Cars						
Diesel Oil, gals X 10^6	6	6	5	5	8	4
Electricity, KWH X 10^6	576	580	567	538	763	756
Gasoline, gals	—	—	—	—	—	—
Air						
Certificated Carriers						
Aviation Gasoline, gals X 10^6	398	268	128	33	15	12
Jet Fuel, gals X 10^6	5,670	7,523	8,891	10,113	10,085	10,140
General Aviation						
Aviation Gasoline, gals X 10^6	375	396	495	522	551	508
Jet Fuel, gals X 10^6	106	138	n/a	168	208	226
Highway						
Gaosline, gals X 10^6						
Pass. Cars + Taxis	53,220	55,007	58,413	62,325	65,649	69,213
Motorcycles	92	103	111	123	135	301
Diesel + Gasoline, gals X 10^6						
Commercial Buses	637	646	655	657	644	631
School Buses	259	264	277	290	300	316
Single-unit Trucks	13,636	14,470	15,674	16,528	17,237	18,221
Combination Trucks	6,779	7,203	7,808	8,199	8,363	8,865
Water						
Vessels						
Residual Fuel Oil, Gals X 10^6	3,093	3,389	3,678	3,506	3,774	3,307
Distillate Fuel Oil, gals X 10^6	699	734	766	793	819	880
Gasoline, gals X 10^6	485	501	533	569	598	645
Transit						
Electricity, KWH X 10^6						
Rapid Transit	2,075	2,194	2,250	2,291	2,261	2,262
Surface Rail	226	180	179	173	157	153
Trolley Coach	166	157	157	154	143	141

Sources: Association of American Railroads, Civil Aeronautics Board, Federal Highway Administration, American Petroleum Institute, American Transit Association

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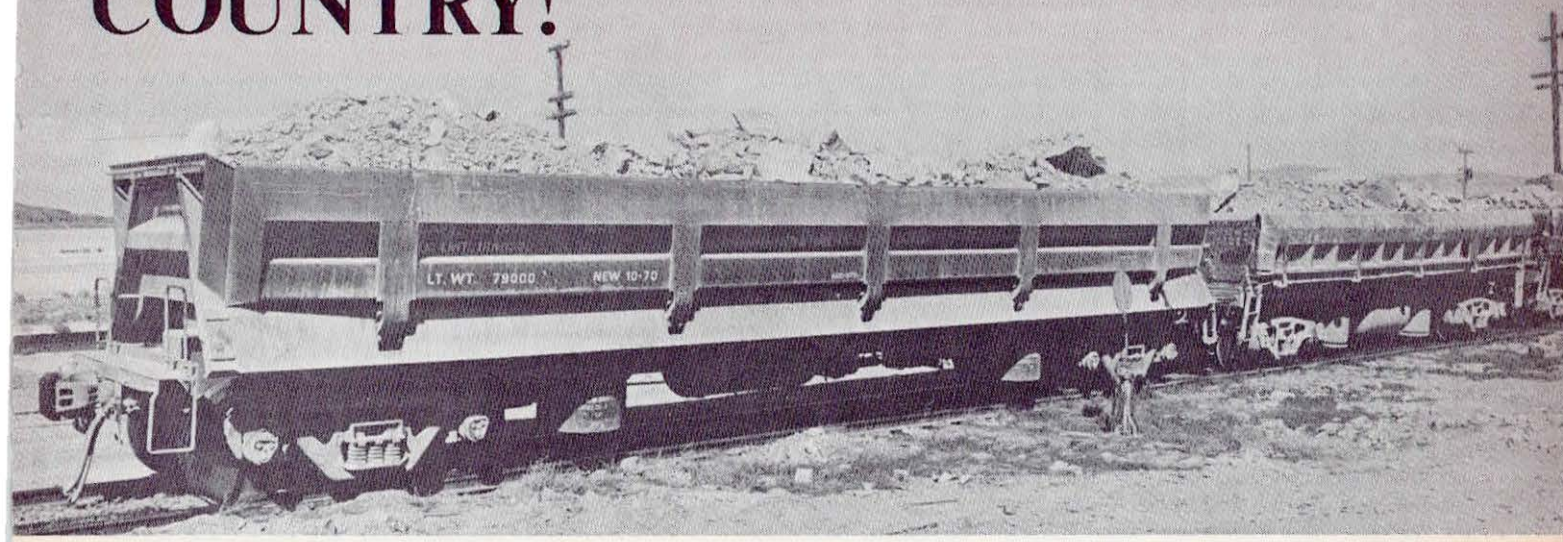

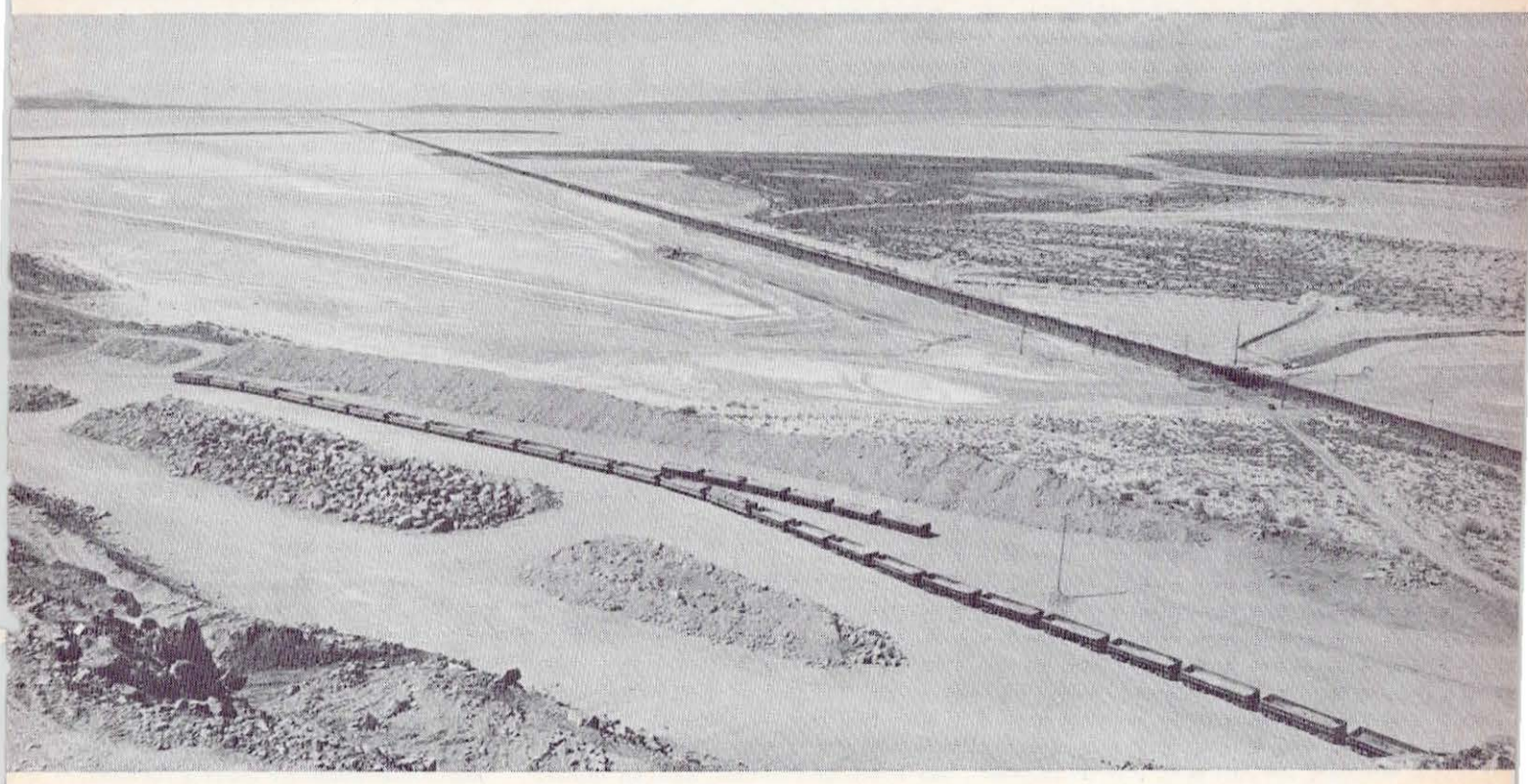

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D722

Transport consumes some 25% of the nation's energy

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● **Good performance gets better.** When they were faced with the energy cost/supply squeeze last winter, railroads embarked upon programs of their own to get as much work out of a gallon of fuel as they possibly could. For example, the computer was worked overtime to get optimum utilization of every piece of equipment that used or depended upon fuel. In some cases, speeds of trains were lowered, if such reductions would result in greater efficiency. Fueling stations got closer monitoring to prevent spillage. Whenever possible, idling of locomotives was cut down. Motive power was matched precisely to the train to make certain that horsepower wasn't being wasted. In some cases, service was cut back.

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Although they have been able to do something about controlling the amount of fuel they use, the railroads have been virtually helpless in keeping their fuel costs in line. The price of fuel has jumped skyward and some fear that it will soon be 50% higher than it was at the outset of the year. And there's no sign of a leveling off. Some of the hard-pressed roads have been hurt severely by this rapid increase in the price of fuel.

● **Where the fuel goes.** The transportation sector of the U.S. economy consumes about 25% of the nation's energy. In 1972, this amounted to a little over 18 trillion Btu. By comparison, the household and commercial sector used 14.7 trillion Btu; the industrial sector, 20.8 trillion Btu; and utilities, 18.5 trillion Btu. The major energy source for transportation is, of course, petroleum. The household and commercial and the industrial sectors depend far less upon petroleum as an energy source, and more on natural gas. Petroleum ranks third among the energy sources for the utilities, behind coal and natural gas. Hydropower is not too far behind petroleum.

Within the transportation sector, railroads rank far down the list in terms of gallons of fuel consumed. In 1971, they used 3.8 billion gallons of diesel oil. Certified air carriers used almost 10.2 billion gallons of jet fuel and aviation gasoline, while trucks used over 27 billion gallons of diesel oil and gasoline. Water vessels consumed 4.8 billion gallons of residual and distillate fuel oils and gasoline. Of course, the really big petroleum fuel hog for the year was the family automobile (and taxis) which used a whopping 69.2 billion gallons.

Quite obviously, the railroads perform a lot more work with the energy they consume than do most of the other modes of transportation. In 1970, for example railroads carried almost twice as much freight as intercity trucks—808 billion ton-miles, compared to trucks' 419 billion ton-miles.

● **Back to coal?** Coal and the railroads have histories that are quite similar. It wouldn't be at all unusual if they should enjoy a resurgence together if the petroleum crunch should persist. Coal dropped from its production peak of 650 million tons in 1947 to only 590 million tons last year. The chances are excellent, however, for this trend to reverse. Coal is gaining in the popularity poll and it could be our salvation in the years ahead. Easing of environmental restrictions will surely help.

But, as the coal industry has warned, coal can't be produced by merely turning a tap. It will take time to get mines into production. Railroads, too, can't be expected to suddenly produce unit coal trains out of thin air. Carbuilders and component suppliers have sizeable backlogs now and would be hard-pressed to tool up and produce open top coal hopper cars in any quantity in the very near future. Besides, these manufacturers are reported to be suffering from the energy shortage themselves, and may not be able to boost production without additional allocations of fuel.

Undoubtedly, now that the nation has come face-to-face with an honest-to-goodness fuel shortage, research that will make coal more environmentally and commercially acceptable will be stepped up. Gasification and liquefication of coal are certain to be studied closely as methods of adding to our energy supply.

Last year, railroads hauled about 63%, or 371 million tons, of the 590 million tons of coal produced. If coal consumption does increase as predicted, and the railroads maintain their share of its transportation requirements, they will be playing an increasingly important role in the future well-being of the nation.

Coal has been mentioned more than once as the energy source of the future for the railroads. A return to the steam locomotive is, of course, out of the question. However, electricity produced at generating stations whose boilers are fired by coal represents at least part of the answer.

Railroads, utilities and locomotive builders have been studying rail electrification very closely. It's a pretty safe bet that electrification will get a foothold in the railroad business in the not too distant future and will grow from there. Initial expenditures for an electrified system are extremely high, and this fact alone has kept U.S. railroads on a diesel-electric locomotive standard almost exclusively since the early 1950s.

● **Back to the rails?** The energy crisis poses a real threat to the rhythm of the nation and there are certain to be changes in the way people and goods are transported. Amtrak is seeing an increase in rail travel. Commuter railroads and transit systems are detecting renewed interest in public transportation.

Piggyback traffic seems to be growing faster than anticipated, and long-haul trucking firms are reported to be showing much greater interest in trailer-on-flat-car service. Fearing a sharp curtailment in their fuel allocations, some of the major trucking firms are said to be thinking about acquiring their own fleets of piggyback flat cars. But, here again, carbuilders don't have openings in their building schedules.

Meanwhile, another 45 million acres of farmland are being opened for the planting of grains and soybeans, which means that railroads will be expected to continue to move large volumes of farm products in the years ahead. In hearings before the Joint Economic Committee of Congress at mid-year on the gasoline and fuel oil shortages, Soo Line said its diesel fuel requirements for the year ending May 31, 1974 would be up an estimated 7% from the previous year. This would put granger road Soo Line's needs at about 37 million gallons for the year. Other roads are looking for similar increases in fuel needs.

In 1973, railroads are expected to consume about 104 million barrels of diesel fuel, up considerably from the 1971 level of 91 million barrels. In 1974, if the railroads are called upon to do more work because of their inherent fuel efficiency, they may require a sizeable increase in fuel allocations. Last month, the Office of Petroleum Allocation of the Department of the Interior listed operations which were to be given priority consideration so far as allocations of diesel fuels are concerned. Prime movers used to distribute fossil fuels are on the priority list, as are mass transportation systems. ■

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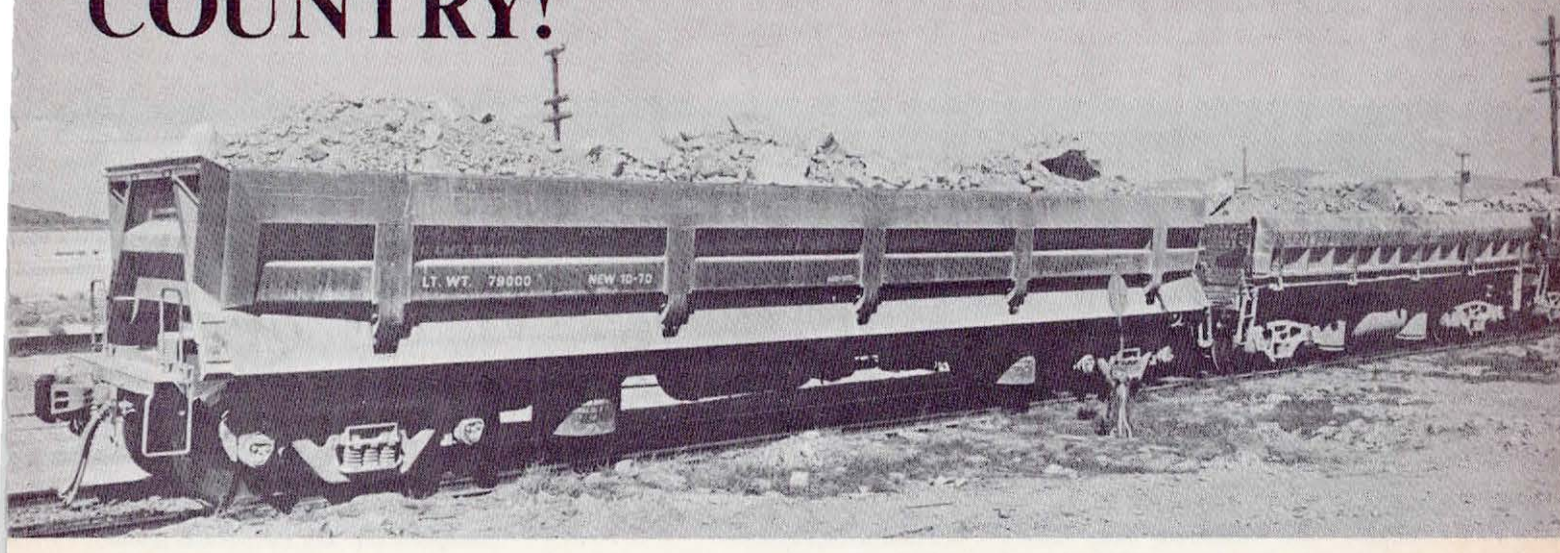

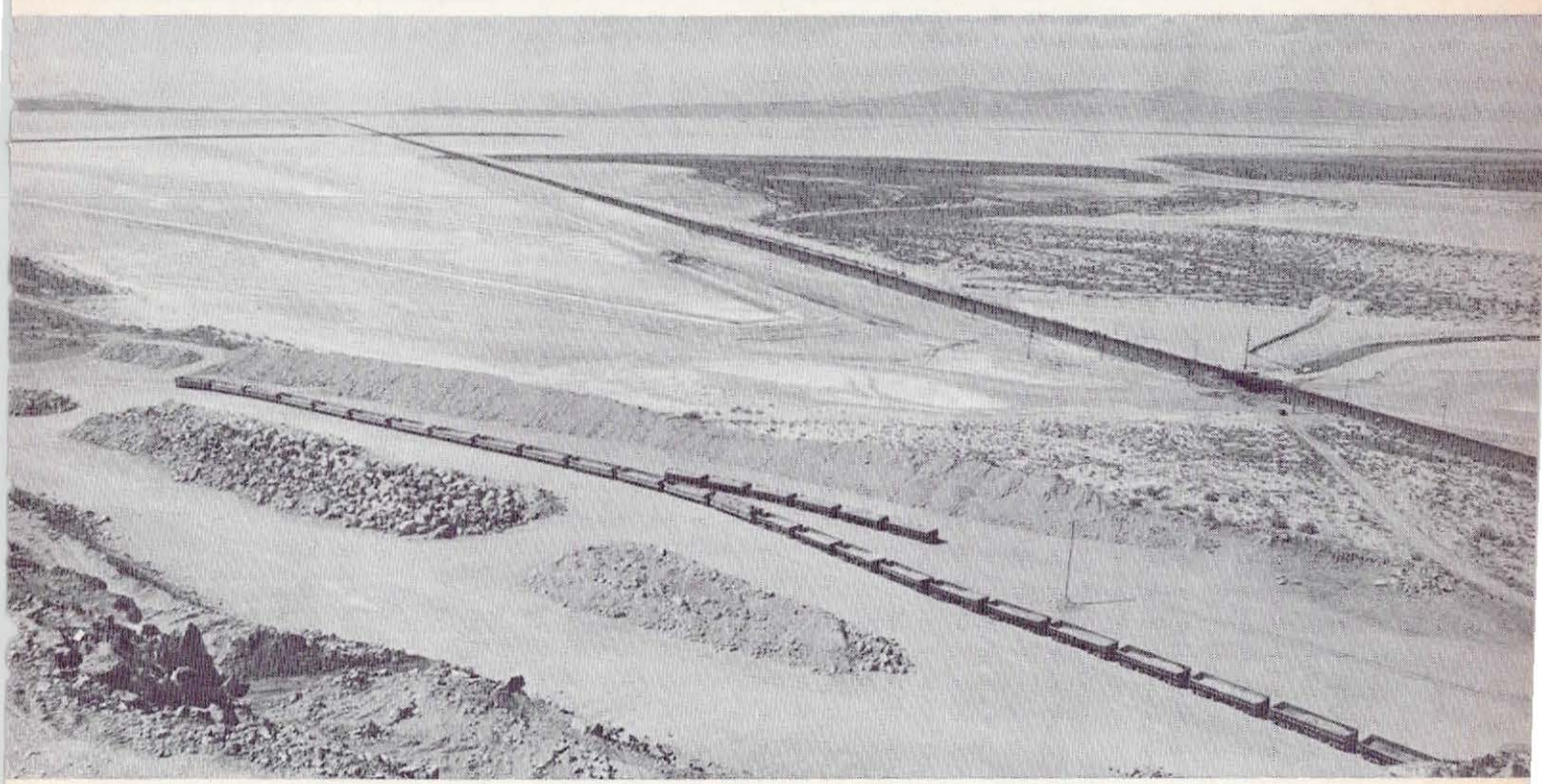

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But, as the coal industry has warned, coal can't be produced by merely turning a tap. It will take time to get mines into production. Railroads, too, can't be expected to suddenly produce unit coal trains out of thin air. Carbuilders and component suppliers have sizeable backlogs now and would be hard-pressed to tool up and produce open top coal hopper cars in any quantity in the very near future. Besides, these manufacturers are reported to be suffering from the energy shortage themselves, and may not be able to boost production without additional allocations of fuel.

Undoubtedly, now that the nation has come face-to-face with an honest-to-goodness fuel shortage, research that will make coal more environmentally and commercially acceptable will be stepped up. Gasification and liquefication of coal are certain to be studied closely as methods of adding to our energy supply.

Last year, railroads hauled about 63%, or 371 million tons, of the 590 million tons of coal produced. If coal consumption does increase as predicted, and the railroads maintain their share of its transportation requirements, they will be playing an increasingly important role in the future well-being of the nation.

Coal has been mentioned more than once as the energy source of the future for the railroads. A return to the steam locomotive is, of course, out of the question. However, electricity produced at generating stations whose boilers are fired by coal represents at least part of the answer.

Railroads, utilities and locomotive builders have been studying rail electrification very closely. It's a pretty safe bet that electrification will get a foothold in the railroad business in the not too distant future and will grow from there. Initial expenditures for an electrified system are extremely high, and this fact alone has kept U.S. railroads on a diesel-electric locomotive standard almost exclusively since the early 1950s.

● **Back to the rails?** The energy crisis poses a real threat to the rhythm of the nation and there are certain to be changes in the way people and goods are transported. Amtrak is seeing an increase in rail travel. Commuter railroads and transit systems are detecting renewed interest in public transportation.

Piggyback traffic seems to be growing faster than anticipated, and long-haul trucking firms are reported to be showing much greater interest in trailer-on-flat-car service. Fearing a sharp curtailment in their fuel allocations, some of the major trucking firms are said to be thinking about acquiring their own fleets of piggyback flat cars. But, here again, carbuilders don't have openings in their building schedules.

Meanwhile, another 45 million acres of farmland are being opened for the planting of grains and soybeans, which means that railroads will be expected to continue to move large volumes of farm products in the years ahead. In hearings before the Joint Economic Committee of Congress at mid-year on the gasoline and fuel oil shortages, Soo Line said its diesel fuel requirements for the year ending May 31, 1974 would be up an estimated 7% from the previous year. This would put granger road Soo Line's needs at about 37 million gallons for the year. Other roads are looking for similar increases in fuel needs.

In 1973, railroads are expected to consume about 104 million barrels of diesel fuel, up considerably from the 1971 level of 91 million barrels. In 1974, if the railroads are called upon to do more work because of their inherent fuel efficiency, they may require a sizeable increase in fuel allocations. Last month, the Office of Petroleum Allocation of the Department of the Interior listed operations which were to be given priority consideration so far as allocations of diesel fuels are concerned. Prime movers used to distribute fossil fuels are on the priority list, as are mass transportation systems. ■

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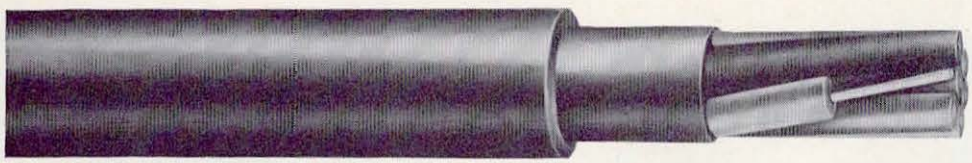

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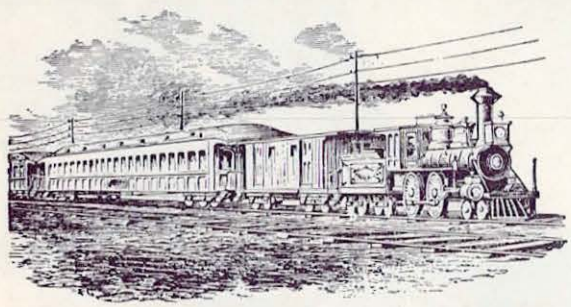

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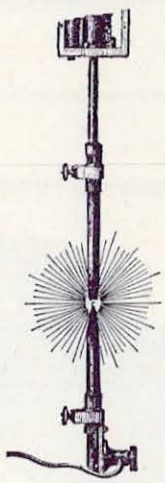

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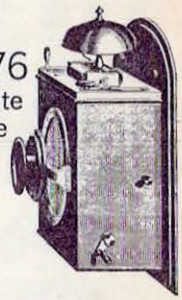

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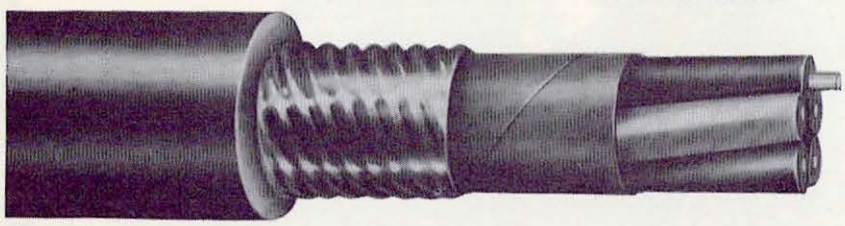

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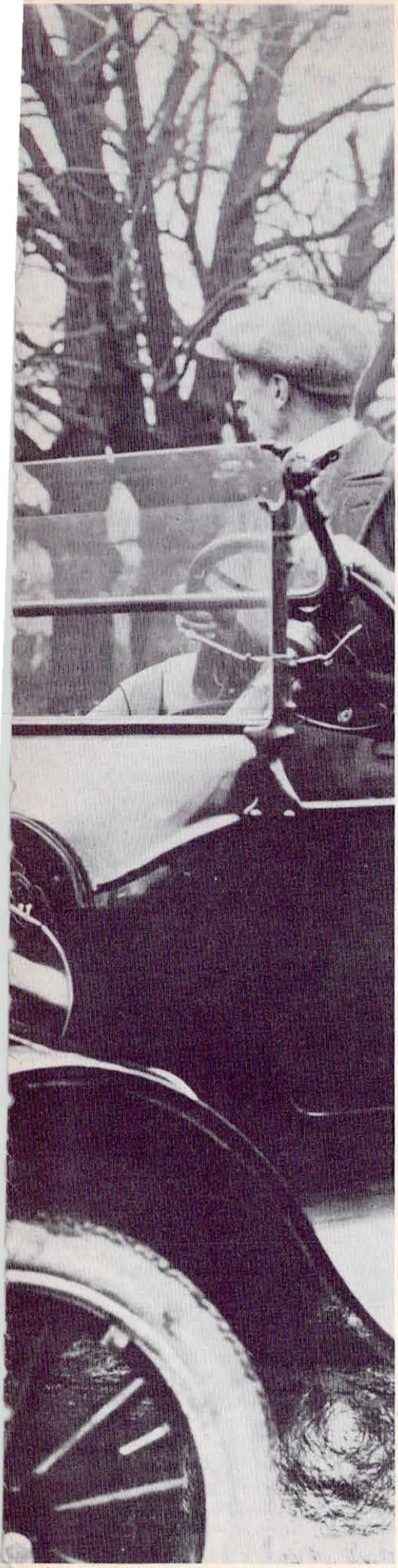

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In protest, many of our cities are giving the "yellow flag" to the automobile. Outraged San Franciscans stopped a downtown expressway in midair. Boston passed a law against any further highway construction. Dade County officials have protested they would need National Guard protection to build another highway in Miami. In 28 urban areas, there are people now studying ways to limit auto use.

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Many other cities are also planning new systems and expanding lines, and modern light rail vehicles are being built for Boston and San Francisco.

It's becoming clear to all of us that rail transit can do what cars cannot. It can bore into the hearts of cities with immense numbers of commuters—without an impossible number of cars to be parked or clouds of poisonous air to be breathed.

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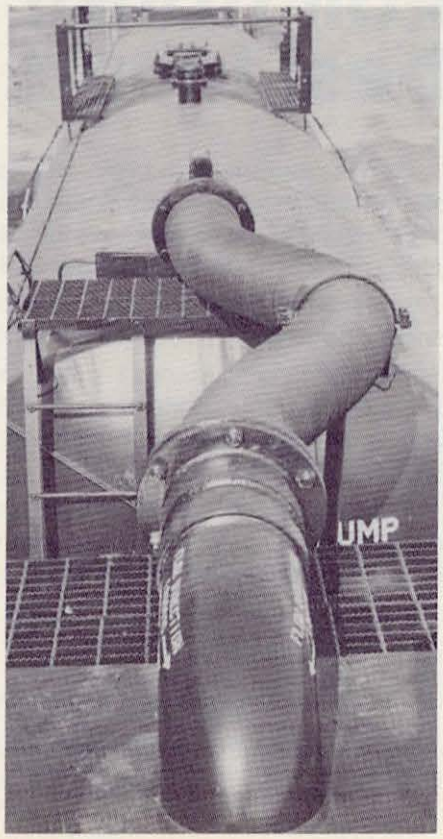
Circle 12 on coupon page 59

TANK TRAIN, a new concept introduced recently by General American Transportation Corp., allows filling or emptying of an entire train of tank cars through one connection. Bulk liquids such as oil flow from car to car through flexible interconnection hoses.

GATX developing a unit tank train

SPRING-LOADED VALVES, which can be operated pneumatically as well as manually, seal off each car in the Tank Train to make over-the-rail movement of the train safer.



FLEXIBLE HOSE joins elbows on top of pair of cars and connects them so that 40-car train would, in effect, be a million-gallon tank car.

At about the same time that President Nixon was advising the nation of the fuel oil crisis and the need to cut down on consumption, General American Transportation Corp. was introducing a new Tank Train concept, one of whose major market targets is petroleum. A classic exercise in bad timing? Not at all.

Even if the United States should be forced to get along on 15-20% less oil than it has become accustomed to, there would still be between 14 and 15 million barrels consumed in this nation every day. Thus, in spite of the crisis, a lot of petroleum will still be moving through distribution channels every day. And, GATX marketing and engineering people think that their new concept—termed the "Million Gallon Tank Car"—can transport large quantities of bulk liquid commodities such as petroleum products much more efficiently than anything on the rails today.

The new GATX system consists of a string of interconnected tank cars which can be filled or emptied from a single connection. Key features of the system are a series of flexible hoses and special valves installed between each pair of tank cars. It is possible to form a million-gallon, 40-car interconnected tank car unit train using the system.

● **For other products besides oil.** "We believe the GATX Tank Train will improve distribution of bulk liquid commodities as diverse as petroleum and chemical products, vegetable oils, or sludge," C.E. Coyl, GATX vice president, said when prototype equipment was exhibited in Chicago in November. A three-car unit train and a model train which demonstrates the filling and emptying procedure were on view. A second three-car train was being assembled at GATX's Sharon, Pa., plant to permit a greater number of tests and demonstrations, company officials reported at the Chicago exhibit.

A three-year research and development project, the Tank Train has a number of benefits that should appeal to shippers, users and carriers of bulk liquid commodities. Coyl, who compares the new concept to the development of the automated manufacturing plant, says that Tank Train "will speed and simplify loading and unloading, greatly reduce expenditures for manpower and terminal equipment, and will drastically cut turnaround time."

It is estimated by GATX engineers that a two-man crew can fill or empty an 80-car Tank Train (broken into two 40-car segments) within an eight-hour shift. They estimate that a train of 20 20,000-gallon cars would need only 2½ hours to load or discharge. Because of the simplicity of the system, explained A.E. Price, chief engineer, it would be possible in an emergency for one man to empty up to a 40-car train.

(Continued on page 42)

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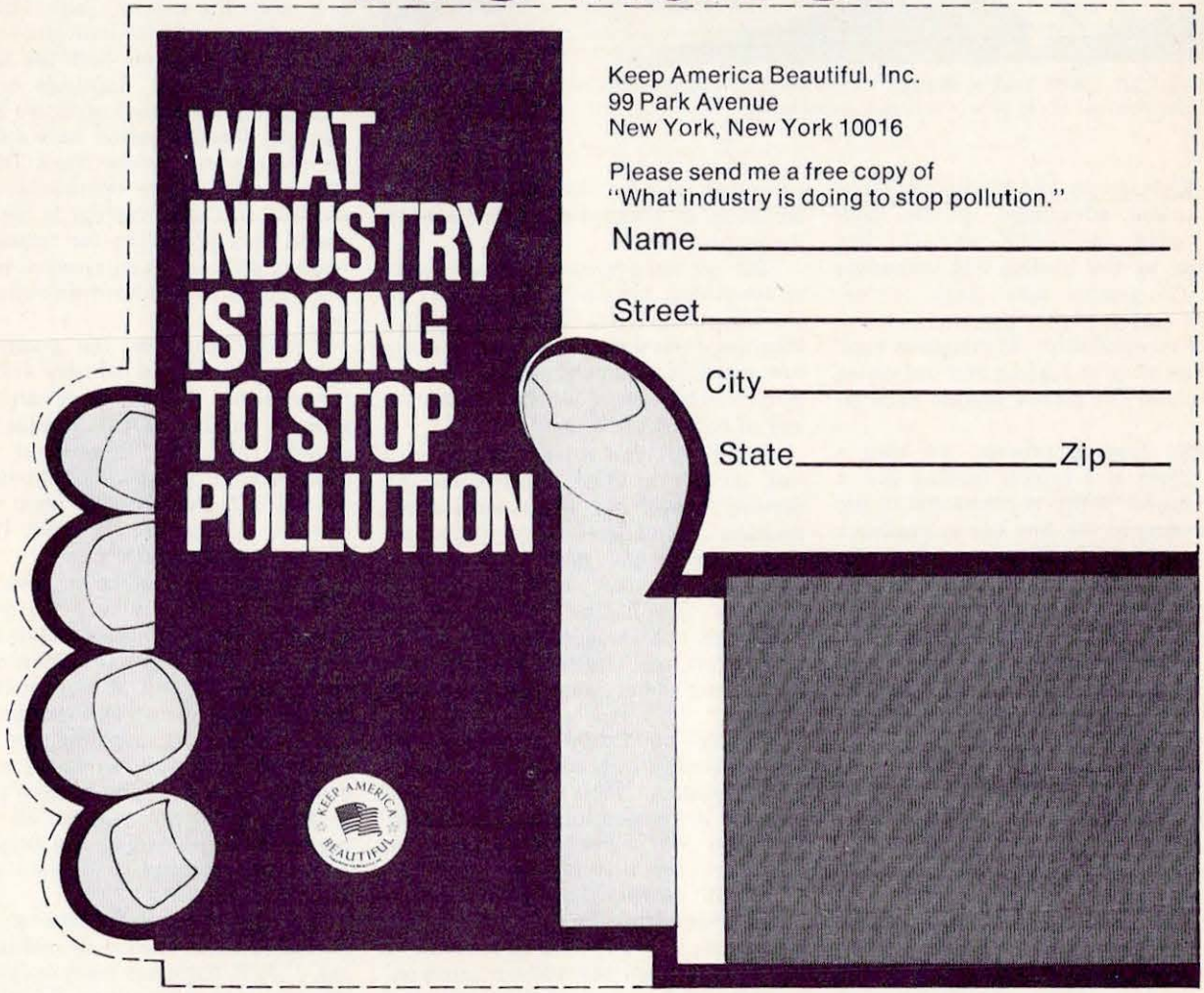

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A THREE-CAR TANK TRAIN MODEL is used by GATX to show the continuous flow of the bulk liquid from car to car via the interconnecting hoses.

In addition to the savings in labor costs, other advantages of the Tank Train cited by GATX are: (1) less handling at the loading and unloading sites; (2) greater flow rates; (3) increased safety; (4) greater environmental acceptability; (5) minimum capital investment at loading and unloading points; and (6) greater market penetration.

● **Rapid loading process.** To load a Tank Train at a typical loading site, a conventional pump is connected in the line leading to the first car to provide a fill rate of 3,000 gallons per minute (for most viscosities). The valves in the interconnected hose system, which can be opened and closed pneumatically from one location in the train, are opened during the loading process. When all the cars in the train have been loaded, a sensing device in the last car detects a full load and signals the shut down of the pump. The valves in each car are closed pneumatically, isolating each car and its cargo from the neighboring car so that the trip by rail to the receiving station will be much safer.

At the receiving station, the procedure is reversed. If need be, an integral pressure car can be hauled as part of the train to allow self-unloading. A 33,500-gallon inert gas car pressurized to 250 psi with nitrogen could easily handle the chore of providing pressure for the pumping action at the receiving station.

● **Open and closed systems.** Two distinctly different systems are envisioned by GATX technicians for handling the bulk liquid commodities at the loading and unloading sites. One, a closed system, is recommended for handling volatile organic compounds. Vapor is collected through a connection attached to the last car. It can either be piped to a collection tank for storage and eventual recycling, or released through a flare to the atmosphere.

The second system—called an open, or simplified, system—vents directly to the atmosphere. It is designed for petroleum products such as No. 6 oil or other low volatility products whose fumes are non-combustible, non-contaminating and of no reusable value.

GATX officials report that they've had the Tank Train concept on the drawing boards for quite some time. Problems encountered in developing designs of hose and valve linkages were solved in only the past three years of research. The flexible interconnecting hoses that link the cars together and in effect form one large car are 10 inches in diameter and are reinforced with steel mesh.

Testing conducted at the firm's Sharon facility indicates that the hoses will maintain their flexibility and strength in temperature extremes ranging from -65 degrees to 180 degrees. They are corrosion-resistant and also fend off deterioration from various liquid commodities. Texts showed that a flow rate of over 3,000 GPM could be achieved through the 10-inch interconnection. Water was used in the test because it closely simulates the flow of crude oil at 150 degrees. GATX officials stressed at the exhibit, however, that the Tank Train concept is adaptable to virtually all bulk liquids that move by rail.

● **Manual or pneumatic operation.** The spring-loaded valves that operate off the pneumatic control system are fitted with indicator arms which point up when they are open. Operators can quickly tell when all the valves are open and the entire system is ready for loading or unloading. Should one of the pneumatically-operated valves malfunction, the operator can board the car, and using the indicator arm, manually open the valve, or close it as the case may be.

To give the Tank Train concept full flexibility, each of the cars in the train can be individually loaded through an open manway and unloaded through the bottom outlet when modified with bolt-on/bolt-off hardware. Actually, the cars used in the new GATX concept are standard DOT 111 A 100 W1 tank cars fitted with additional top nozzles to receive the fittings for connection of the flexible interconnections. Coyl reports that the cost of the Tank Train cars closely approximates the cost of individual standard tank cars of the same size and style, and one of the goals at GATX is to keep the cost of Tank Train at a competitive level with individual cars.

● **Maybe Alaskan oil.** Both the Association of American Railroads and the Department of Transportation's Federal Railroad Administration have approved the prototype three-car Tank Train for experimental service operations. GATX revealed that the concept is being discussed as a possibility for transporting Alaskan oil from its entry point into the U.S. proper to various distribution centers.

"Tank Train has the potential to enhance the railroad industry's competitive position, vis a vis other carriers, for a broad number of bulk liquids," Coyl added. The rapid turnaround of the trains should be especially appealing to the railroads since it helps them in their drive to gain greater efficiency through improved car utilization.

● **Minimal terminal costs.** Users, who are also on the lookout for ways of keeping their terminals costs at a minimum, will find that Tank Train requires a minimum amount of in-plant trackage and very low investment in equipment and services for handling the liquid commodities in and out of the train. As a matter of fact, if the integral pressurized gas tank car is used, all that is required for unloading is a single pipe connection leading to in-plant storage tanks.

Recognizing that mechanical devices always run the chance of malfunctioning, GATX engineers have designed the flexible interconnections between the cars so that they can be disconnected with relative ease. Should one of the cars in the train be "bad ordered," it can be removed from the system by merely loosening six bolts in the interconnections at each end of the car, disconnecting the pneumatic and air brake hoses and uncoupling it from the train. The train can then be reconnected with a reversal of the procedure. The spring-loaded valves, being in the closed position, prevent any loss of the commodity while the bad order car is being isolated. ■

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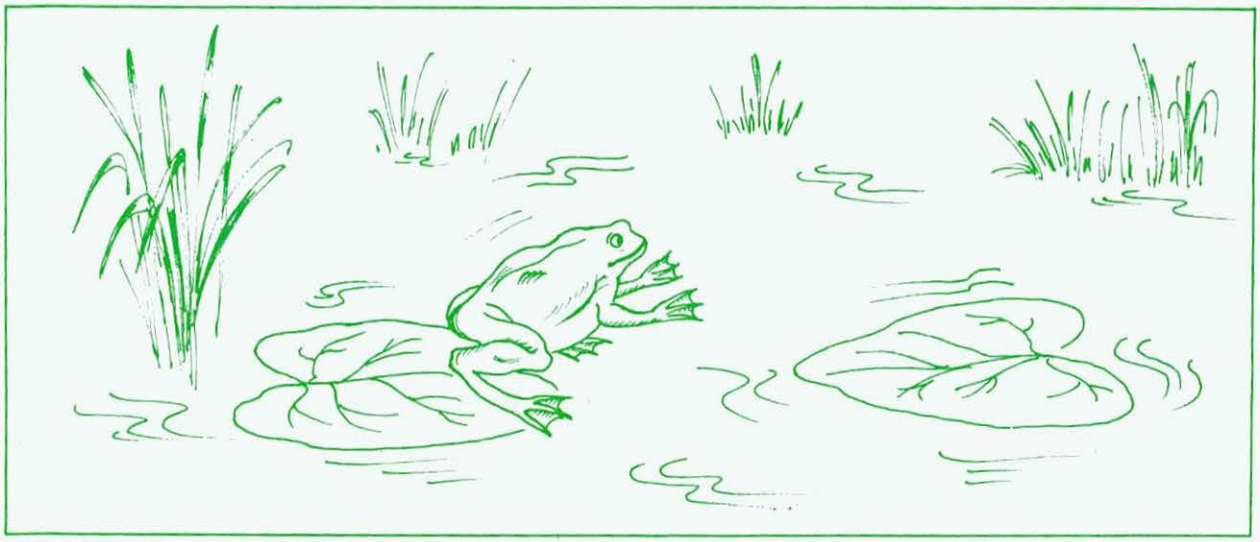

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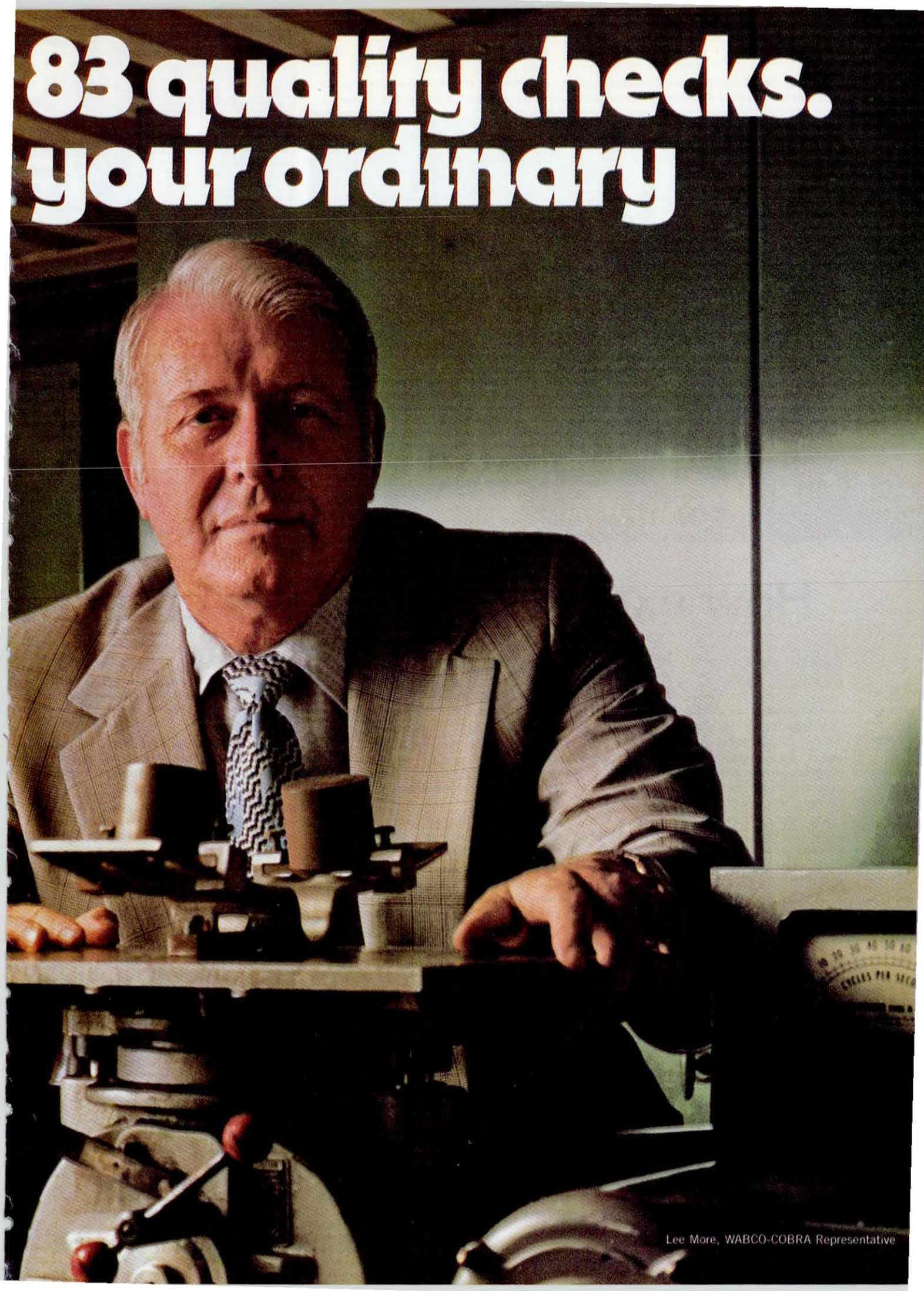


Lee More, WABCO-COBRA Representative

PRESENT SHORTAGE of wood crossties is occurring in the face of government estimates that the supply of hardwood timber will continue to exceed the demand for at least two decades.

How experts size up the crosstie

By MERWIN H. DICK
Engineering Editor

The supply of hardwood sawtimber "will materially increase over the next couple of decades. Projections of demand. . .are somewhat below projected supplies for the next decade or so. This suggests that most of the growth in demand, at least during the next few years, can be met from prospective supplies."—Dr. Dwight Hair, director of special studies, Division of Forest Economics and Marketing Research, United States Forest Service.

". . .With the exception of diesel fuel oil there is no single item used on the railroad which is giving us so much concern as the tie. . .I have discussed crosstie availability, or non-availability, with enough people on other railroads to know that this problem, with few exceptions, is a universal one."—Malcolm P. Richards, vice president, purchases and stores, Penn Central.

Does the situation portrayed by these apparently contradictory statements represent another credibility gap? Definitely not, but any attempt to answer the question must contend with a host of diverse forces which have combined to present the railroads with a crisis as they attempt to obtain their crosstie requirements for 1974 and beyond.

There is no lack of evidence that a crisis exists. The evidence comes partly from addresses made by railroaders, tie producers and lumbermen delivered at recent meetings. These include the annual meeting of the Railway Tie Association at Memphis on Oct. 18, the regional meeting of the American Railway Engineering Association at Philadelphia on Oct. 25, and a meeting of the Maintenance of Way Club of Chicago on Oct. 29.

To the evidence of a crosstie shortfall that came out of these meetings can be added the results of a canvass made among representative railroads by Railway Age to obtain specific information regarding the proportions of the shortfall. A fact developed by the canvass is that the problem varies widely between railroads. At one extreme is the situation on a large midwestern road whose chief engineer reported that it appears his company will "just barely" obtain its crosstie requirements for 1974. He indicated, however, that the railroad is being saved from encountering a shortage by "budget restrictions" on the crosstie program for 1974.

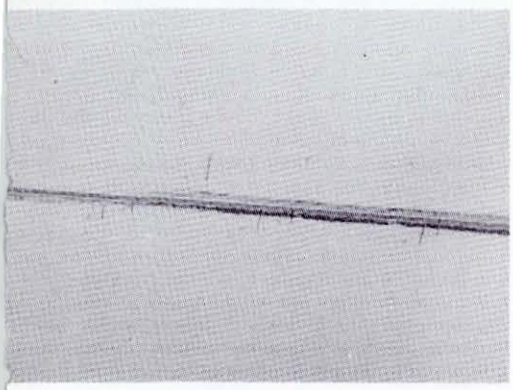
Another large railroad is being spared a shortage of ties next year only because it has on hand an unusually large inventory of ties, says its chief engineer. He adds, however, that the road expects to face a serious problem when it attempts to fulfill its requirements for 1975.

Railroads such as these, which are not anticipating great difficulty in obtaining their crosstie requirements for next year, appear to be in the minority. More representative is a large carrier whose engineer maintenance of way expects he will fall about 540,000 ties short of meeting the requirements for 1974, which have been set at about two million ties. This engineer reports further that his experience leads him to believe that most other railroads are in the same predicament. One result is that many railroads are anxiously investigating foreign sources of wood ties to help fill the gap.

● **Shortfall on PC.** As short of cash as it is, the Penn Central still was not able to obtain the crossties that it wanted to schedule for insertion in 1973. Speaking at the AREA meeting in Philadelphia on Oct. 25, J. Bruce Addington, PC's vice president operations, explaining that the road had installed almost two million ties annually since reorganization got underway, said that this has been accomplished in the face of the "recent severe shortage of crossties. For instance, this year we could install 300,000 more—but they're just not available from the suppliers." Another "barrier" that has had to be overcome, said Addington, is the fact "that the price of crossties has spiraled in just three years—going up by almost 25% in just the past 18 months."

AUTHORITIES use such terms as "insatiable" and "absolutely no limit" in describing the demand for hardwood lumber in the manufacture of pallets which compete directly with crossties for the available supply of lumber.

BAD WEATHER, including flooding in the Mississippi River valley, has caused "countless thousands" of crossties to be lost due to the fact that logging and sawmilling operations were taken out of action over a seven-state area.



crisis

Addington then made a comment that indicated the crosstie shortfall on the PC could get much worse, providing the means could be found to rehabilitate the road. At a hearing before the Federal Railroad Administration, "our people," said Addington, "testified that we should be installing 3.9 million ties annually for the next four or five years to totally rehabilitate our railroad, and thereafter 2.2 million ties per year to maintain it at that level."

The fact of the crosstie problem is plain enough to see, but the causes—and possible solutions—are something else. When all the factors in the situation are assembled they present an extremely complicated picture. Some of the more important elements include a growing demand for crossties, increased competition for the supply of hardwood lumber and a reduction in the quantity of logs being cut for conversion into ties.

● **Tie demand spiraling.** The burgeoning demand for crossties came out in remarks made in an address at the AREA meeting by H.R. Jekel, vice president, Moss-American, Inc. From a low of about 12 million in 1961, he said, annual crosstie insertions "are back up to 20 million-plus now and will probably go to and hold at 30 million, when and if the ties are available."

Forecasts of the crosstie demand for 1974 were made by other speakers who appeared before the October meetings. One of these was R.R. Wingard, assistant vice president, Forest Products Division, Koppers Co., Inc. "The need for crossties to be inserted in track in 1974 should approach 26 million pieces," he said, "including ties for branch lines and industrial tracks, barring adverse economic conditions that would dictate curtailment of maintenance expenditures."

Looking further ahead, Wingard sees an even greater demand for crossties. Giving consideration to the "need for improved maintenance of right of way, the current accumulation of deferred maintenance and the increasing pressures from the Federal Railroad Administration, the conclusion seems obvious," he said, "that the demand for ties will continue to increase for the next several years. One analysis of the various market factors which I have studied indicates an annual market of at least 30 million ties."

● **Out of the past.** In seeking to obtain these enlarged requirements of crossties, the railroads come face to face with a set of circumstances set in motion by what one of the October speakers referred to as "the everlasting and much deplored peaks and valleys of tie demand." The speaker was Moss-American's Jekel. He put it this way: "In money-making years our railroad customers order ties in relatively large volume, and in lean years—and there have been too many of these through the years for too many of our customers—they tighten their tie-insertion belts, and we perforce tighten ours."

The consequences of these peaks and valleys of demand were spelled out by J.A. Burnett, director, purchases and stores, Rock Island, in a talk at the meeting in Chicago on Oct. 29. When the demand went into a valley, he said, "the small sawmill men would put their mills up on blocks and when the time came to go back into production they would have other jobs and could not be enticed into the business again."

A detailed picture of the extent to which the number of tie producers has declined was drawn by Malcolm Richards of the PC. In 1951 there were 68 active producers on the lines of that road, he said. The number dropped to 27 in 1955 and to 21 in 1961. By 1965 only 14 were shipping crossties, he said.

G.H. Way, Jr., assistant vice president, AAR, has his own explanation for the disappearance of the small sawmills. He was one of the speakers at the AREA meeting in Philadelphia. He explained his reasoning this way: "The production of small family owned and operated sawmills, on which the railroad industry has relied heavily, is not economically efficient and is consequently slowly disappearing in favor of large integrated sawmill operations which are able to produce a greater percentage yield from forest harvests and to direct the right logs and portions of them into the right products." But there's a drawback, said Way, in that "these plants require large capital investments which are reflected in the price of their products."

A plus factor was seen by Wingard in the disappearance of small sawmills. Although many small mills have disappeared, he said, they have been replaced by "larger more sophisticated operations, capable of sustained year-around high-volume production. Additionally, several tie suppliers, such as my own company, are investing heavily in their own specialized mills for producing crossties. The effort is not in any sense to force the small mills out—indeed we encourage them to remain in many ways—but we must replace their production wherever they elect to leave the market."

● **Other production roadblocks.** Not only have the small operators been disappearing from the scene but so have producing lands, according to H.R. Jekel. There has been a loss of good producing lands to soybeans and to pasture, he said. "This is going on all over the south and the deep south," he declared, "and the end is not in sight." Jekel did, however, add the encouraging note that "better timberland management promises to help make up completely or in part for these losses."

Bad weather and flooding are factors that have had at least a short-term effect this year on tie production. "The Mississippi River," said Jekel, "has had the worst floods in 25 years, and countless thousands of crossties have been lost by the taking out of action of logging and sawmilling operations in Illinois, Kentucky, Missouri, Arkansas, Tennessee, Mississippi and Louisiana."

Koppers' Wingard also commented on this factor. "The latter part of 1972 and the first part of 1973 were," he said, "witness to extremely serious and disastrous weather, including record heavy rainfall and flooding in the major hardwood producing regions, to the extent that logging operations were practically at a standstill and many sawmills were idle due to the lack of log supplies. Mills were unable to accumulate log inventories in the fall of 1972 to carry them through the winter of '72-'73, as is normal practice."

● **The villain: pallets.** While crosstie production was being hampered by these various factors, other forces were at work that were having the effect of diverting hardwood supplies to other uses, especially for the manufacture of pallets. Quoting figures from the National Wooden Pallet & Container Association, Richards said that in 1971, 9.69% of the national lumber production, or 3.451 billion board-feet of lumber, was used to produce 138 million wooden pallets in the United States. "That is equal to 86 million

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Tie producers appear confident they can satisfy the demand for crossties, despite rising competition for timber

crossties," he noted. The production goal of pallet manufacturers, he added, is 400 million wood pallets by 1985.

The increasing demand for pallet lumber was also mentioned by George C. Romeiser, executive vice president, Southern Hardwood Lumber Association, in an address before the Memphis meeting of the RTA. "Pallets," he said, "are the biggest volume user of low-grade hardwood lumber and take over 25% of the total annual USA hardwood lumber production."

Jekel used the term "insatiable" in referring to the demand for pallets. "It appears," he said, "that there is no grade requirement, no price limitation for the raw lumber and absolutely no limit to the demand."

Romeiser also mentioned the growing demand for hardwood in the manufacture of furniture, saying that shipments for this purpose had been increasing by 15% to 18% annually. The demand was also growing, he said, for laminated oak flooring for trailers and car decking, while the demand for lower grade hardwoods in manufacturing boxes, crates and cases was holding its own.

● **"Insatiable" user.** A recent phenomenon is the "equally insatiable" demand for saw logs from the Japanese, said Jekel. While this is mostly for Douglas fir, there is a "rock-in-the-pond effect which has sent a ripple into the farthest reaches of the timber industry," he said. "All of this has had the effect of causing us in the tie-producing industry to run like mad just trying to stay abreast of the relatively modest demand and, try as we will, we are not succeeding."

While the demand for hardwood has been increasing, what has been happening to total production? It has remained relatively constant, according to figures offered by the PC's Richards. For the last 11 years, he said, the national hardwood production has held within a range of 7.0 to 7.7 billion board-feet. "Obviously," he added, "timber is being cut, and equally obviously it is being sawmilled. It appears equally obvious that this stumpage which formerly went largely into railroad ties, and industrial blocking, oak flooring and furniture stock, is still going into all of these products plus this starter—pallets."

● **Prices going up.** Not the least painful effect of the increased demand for hardwood on the railroads has been the resulting increased prices for crossties. Richards related the price of the ties to that of pallet lumber. Successive increases paid for pallet lumber brought the price per thousand board-feet to $150 by early September. "If my arithmetic is right," he said, "that works out to $6.69 for a grade five 8-foot 6-inch tie."

Wingard's view of the price situation is that the "relationship of tie prices to alternative hardwood products became unbalanced, causing many mills to produce less ties and more of the higher-priced pallet lumber, furniture frame stock, flooring, industrial blocking, etc."

Even in view of the increased prices being asked for ties, railroad men say they are still not getting the ties they are willing to buy. Within the last 11 months price increases have totaled $1.85 per untreated tie, said Rock Island's Burnett, "and still we aren't getting any ties." This same experience is echoed in conversations with tie men on other railroads.

Photo courtesy Koppers Co., Inc.

A PLUS FACTOR cited by one authority is that, although many small mills have disappeared, they have been replaced by larger, more sophisticated plants such as this one.

● **Dramatic changes coming.** The way the hardwood lumber industry is now shaping up is certain to lead to dramatic changes in wood processing and utilization, according to industry spokesmen. One of these is George Romeiser of the Southern Hardwood Lumber Association. These changes, he said, include "much more sophistication in utilization as well as acceptance of the fact that each tree must be channeled into the product that will provide the greatest economic return . . .Even the paper-oriented corporations will shift the use of their wood supply to the most profitable products, which could very well include crossties."

Romeiser offered this further observation: "Although crosstie production is likely to be more directly competitive with other hardwood products in regard to the use of the log, the change will not mean long-term crosstie shortages. In view of the nature of our hardwood sawtimber supply, now and in the future, crosstie production should represent an important aspect of wise utilization. Pricing must be realistic, however, because in the future the timber grower will have to realize a better return on his raw material."

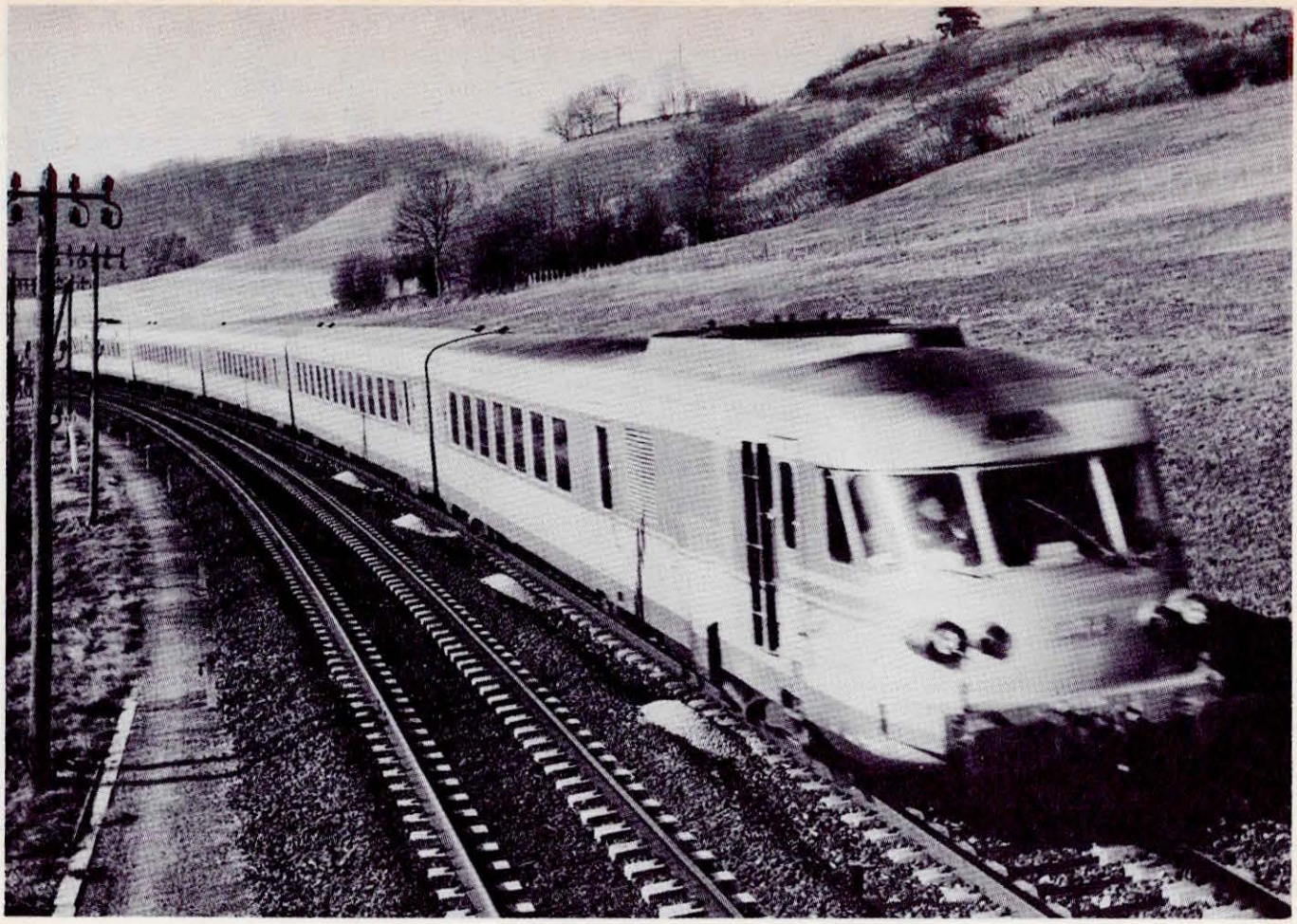
The tie producers appear confident that they can satisfy the demand for crossties. Said Koppers' Wingard: "Our industry is equal to the task. We must ask for some patience, but we remind you that we have plenty of trees, adequate sawmilling capability, for which our industry will compete, sufficient treatment plant capacity, plus the will, human resources and capital to continue providing the nation's railroads with a firm foundation—the pressure-creosoted wood crosstie."

Which brings us back to Dr. Hair's prediction regarding the adequacy of the hardwood supply. Although his forecast was that increasing demand could be met from prospective supplies in the near future, he did say that the "longer-run demand-supply situation indicates that the country is faced with increasing competition for the available hardwood timber and rising prices."

● **Role of the concrete tie.** A natural question, in view of the difficulty of obtaining wood ties, is whether the concrete tie can be counted on to help fill the gap. To this question, John W. Weber, principal transportation engineer of the Portland Cement Association, responds with a qualified "yes." In an address at the Oct. 29 meeting at Chicago, he pointed out, however, that the existing concrete tie industry in the U.S. is small. Capacity of the largest existing plant, he said, is "somewhere between 700 and 800 ties per day or about 200,000 ties per year. All other existing plants may be capable of turning out the same number."

For the concrete tie to have a significant effect in closing the gap, production capacity would have to be increased by a factor of 10 or more, said Weber. He noted that a "huge" capital outlay would be required for new plant facilities, but "it is not likely that the capital requirement can be met without a firm commitment by the railroads contemplating the use of concrete ties." Weber also warned that a lead time of six months to a year would be required before concrete ties in significant quantities could be made available.

Another point made by Weber is that not all concrete ties presently being produced can meet the strength requirements of the specifications as they have recently been modified. "However," he said, "such ties should be perfectly adequate for light traffic tracks. This could release wood ties for spot replacement in mainline tracks." ■



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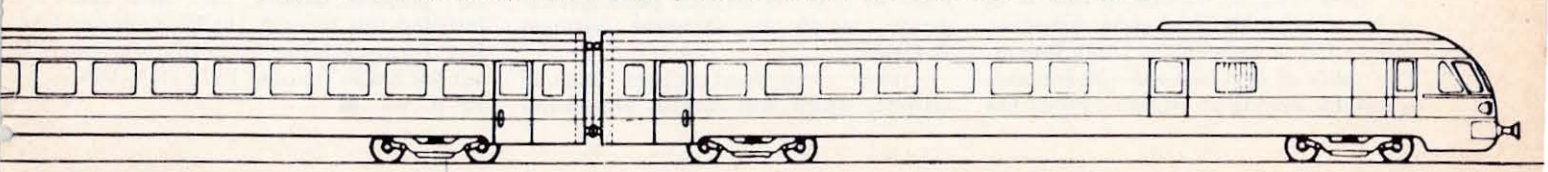

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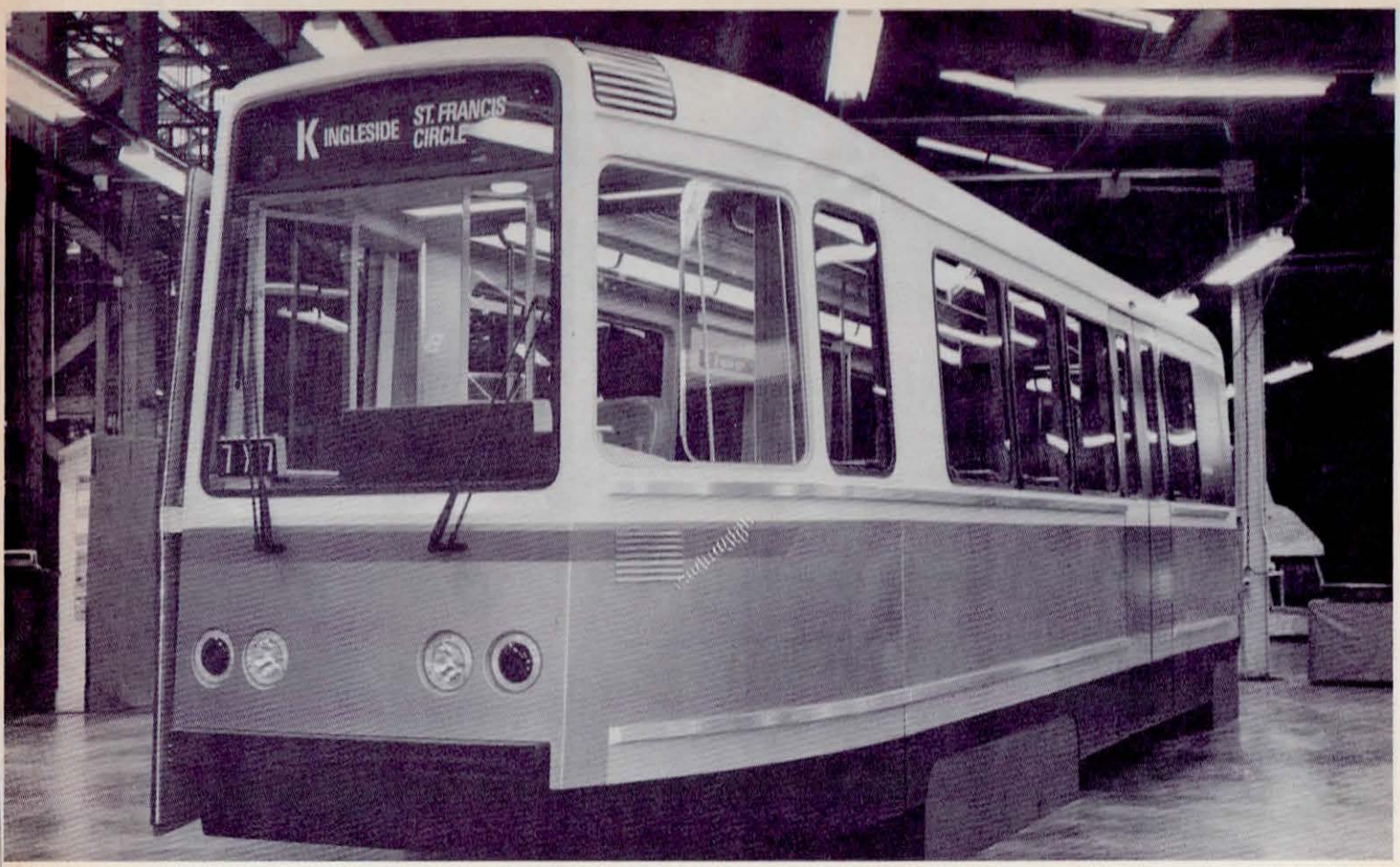


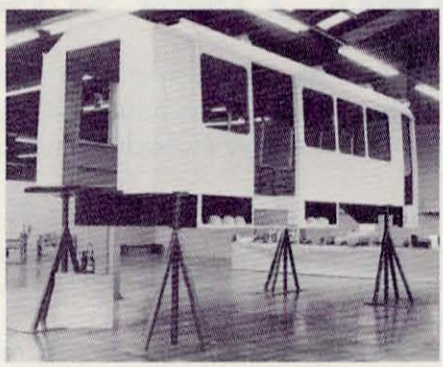
SUNDBERG-FERAR built this mockup of car Boeing Vertol will supply to Boston and San Francisco. Under-floor hardware will be added.

First light rail car due in mid-'74

The Boeing Vertol Co., which earlier this year won a $69-million contract to supply 230 71-ft articulated "light rail cars" (or streetcars, as they used to be called) to Boston and San Francisco, is now aiming to have a pilot car in test service by mid-summer 1974.

The first of the car shells, which are being built by Tokyu Car in Yokohama, Japan, has now arrived at the Boeing plant in Philadelphia which once was devoted to helicopter production. Meanwhile, a from-the-floor-up mockup of the car has been completed by the design firm of Sundberg-Ferar, and a mockup review has already been held with San Francisco and Boston officials. Under-the-floor hardware will be added to the mockup, and there will be more reviews. This follows standard aerospace practice, says a Boeing spokesman, adding: "If there are going to be any changes, we want them to come before we are in production."

The first car shell underwent successful stress tests in Yokohama Oct. 1. In addition to building the basic carbodies, Tokyu Car is welding the truck frames. The value of the Japanese sub-contract is put by Boeing at around 12% of the total. Boeing gave the sub-contract to Tokyu Car because domestic bids were not within the "should-cost" analysis on which the prime-contract bid was based, said the Boeing spokesman. Another factor, he said, was Japan's considerable technical know-how in this field based on the extensive research that has been done in that country on passenger-car design, mainly by Japanese National Railways.



TOKYU CAR is building car shells and welding truck frames in Japan.

Other sub-contractors include Garrett, which will furnish propulsion equipment (with Rockwell supplying gearboxes); New York Air Brake, brakes and couplers; and Lear Siegler, air-conditioning equipment.

Following the pilot-car tests that will begin next summer, Boeing Vertol will go into full production and expects to be turning out one car a day by mid-1975. The 80 cars for the San Francisco Municipal Railway and the 150 cars for Boston will not be identical. The Muni cars will not, for example, be air conditioned. On the other hand, San Francisco opted for an automatic train control device; Boston didn't. The Muni cars will have seats for 68 passengers, with accommodations for 190 under peak conditions. The Boston cars will seat 52 and accommodate 210 at peak.

These will be the first cars of their kind to be built in the U.S. since 1952. This year's bidding followed an earlier round of bids based on engineering and design specs that resulted in bids so high that the Muni, which had initiated the project, backed off. New specs initiated this time by the Massachusetts Bay Transportation Authority, were put out for bid in October 1972 (RA, March 12, p. 33). ■

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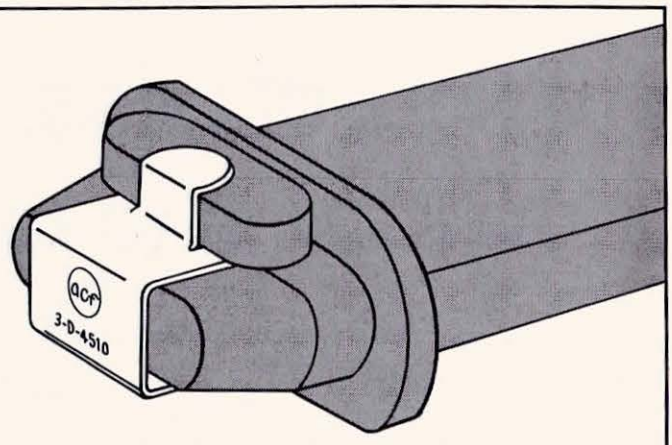

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LAND BANK of unused railroad rights-of-way has been proposed; concept took a set-back in 1972 when a second major transportation bond issue was turned down by voters.

PIONEER in state-subsidized rail commutation, New Jersey has pushed rolling-stock acquisitions. State-owned locomotive hauls Jersey Central train over Penn Central track; coaches still sport original Burlington Northern green, blue and orange liveries they had when state bought them.

In a time of crisis, New Jersey turns to rails

Twin crises—energy and environment—are giving new stature to public transportation in New Jersey. At Princeton University in late November, public and transportation officials and planners gathered to discuss strategy for mass transit in the nation's most densely populated state at a time when fuel shortages are threatening to have a major impact on its automobile-based economy.

New Jersey Governor William T. Cahill said the state is ready to move immediately "on plans to extend bus operations to reach much larger numbers of commuters, as well as to provide more service on existing rail lines as the shift from the auto to mass transit occurs."

New Jersey Congressman Robert A. Roe warned that "America must start acting, not reacting to the energy crisis and to the transportation crisis." He decried the absence of a national policy on transportation and noted that since the states do not have sufficient resources, Federal aid is vital.

Said State Assemblyman Joseph P. Merlino: "The energy crisis can be a blessing *not* in disguise; New Jersey must now drop all reasons for not fostering mass transit." He urged that steps be taken to discourage the use of the auto completely in urban areas and to stop the movement of industrial headquarters from urban to suburban areas where they cannot be served by mass transportation.

While Keith Rosser, New Jersey's director of transportation planning and research, spoke of "the frustrations of a switch from an auto-based society to mass transit," he pointed out that the State's ongoing strategy for a decade has been to preserve and enhance what is probably the largest suburban rail system in the nation. Most attention so far has been given to providing rolling stock for these operations.

In the next phase, said Rosser, would be major fixed-property improvements:

—Electrification (and re-electrification) of Erie Lackawanna suburban lines.

—Electrification of the North Jersey Coast line of the New York & Long Branch (jointly operated by Jersey Central and Penn Central).

—Extension of the Newark City subway.

—Extension of PATCO's transit lines out of Philadelphia and Camden to serve new territories.

—Construction of a new transit line through Hudson Country, adjacent to New York City.

Institutional and financial constraints hamper rail transit planning, according to Rosser. While Federal highway aid is on an ongoing basis which allows states to project the funds they will receive, mass transit is confronted with the competition of cities and regions for limited grant dollars on a project-by-project basis. This problem was discussed further by Transportation Commissioner John C. Kohl who said that since private money and the fare box would never be capable of fulfilling capital needs for rail transit, public funding is the only recourse although presently planners never know how much, or when, Federal funding will be available. Long-term allocations are needed for adequate planning.

New Jersey has been reluctant to make fixed property investments in New Jersey commuter railroads since all of them are in bankruptcy and the possibility of their liquidation could wipe out the state investment. Governor Cahill and his predecessors have sought to work through the private sector with operating subsidies and rolling stock investment to preserve the state's rail and bus operations. Despite the Erie Lackawanna bankruptcy, the State has been successful in working out with the railroad and its creditors the conversion of the electrification on existing lines. Federal funding is being sought since matching state funds are available.

Now, however, Cahill and Kohl see "a whole new ball game" in the ramifications of the H.R. 9142 (the Shoup-Adams bill) for restructuring the Northeastern railroads. Evolution of a viable core system, required by the pending legislation, "could be a transportation disaster for New Jersey," according to Kohl, with loss of virtually all lines except the New York-Philadelphia corridor. While H.R. 9142 may resolve the financial woes of existing railroads and their creditors, it would give New Jersey a relatively short time to establish and finance agencies that would preserve those lines not in the "core system." ■

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BEST WISHES FOR THE HOLIDAY SEASON

"Why should Nebraska pay for transit in New York?"

Both houses of Congress have now approved bills authorizing transit operating subsidies totaling $800 million over a two-year period (on top of the $1-billion a year already available in Federal funds for transit capital grants). But as a House-Senate conference committee worked on the final version of the legislation, the Nixon Administration continued to talk of a veto. One newspaper editorial voiced a widely-held objection to such operating aid: Why should the people in Nebraska help pay for transit rides in New York?

In an interview with Railway Age, the transit industry's principal spokesman—Dr. William J. Ronan, chairman of New York's Metropolitan Transportation Authority and president of the Institute for Rapid Transit—addressed himself to this question, and others that are being raised as the worsening energy crisis puts more pressure on public transportation.

Q. The President himself has expressed the hope that the energy crisis will drive people in large numbers back to public transit. Do you perceive any change in the Administration's stated opposition to operating subsidies which presumably, by keeping fares down, would help to achieve the President's goal?

A. As soon as the President gave his first message on the energy crisis, I wrote him a letter and said I applauded his mention of mass transportation and I urged his support of operating assistance as one way in which the Federal government could very quickly and very economically assist in meeting the crisis. The deepening of that crisis certainly makes it more likely that legislation providing this assistance will get favorable consideration.

We are heartened by the fact that the President did sign the Amtrak bill. We think that if you're going to help the 33,000 people that use Amtrak facilities on a weekday in the Northeast corridor, you ought to help the millions who must use mass transit in the corridor.

Why should the people in Nebraska help pay the transit bill for New York City? First of all, the people in Nebraska won't be paying it, because we pay far more to the Federal government in income taxes, compared to what we get back, than the people in Nebraska. I would add that the people in Nebraska also have a stake in this, because they are going to find that they also need public transportation—not only in the cities, but in the rural areas.

"WHY NOT?" asks MTA Chairman/IRT President William J. Ronan. "New York has been subsidizing Nebraska's farmers for years."

We are a nation and we have to treat things as a nation. The New York taxpayers have been subsidizing the farmers in Nebraska and elsewhere for many decades; the Federal government coming into the mass transit field will not cost anywhere near the amount of money which has been spent to subsidize the farmer. The total amount requested for transit assistance is small; compared with the amount of money the government has put not only into farm subsidies but the space program and inland waterways and what have you, it's a modest sum indeed.

Q. Some people fear that the Urban Mass Transportation Administration, with its comparatively limited capital funds of around $1 billion a year, will have to put this money increasingly into short-term solutions—buses—at the expense of such long-term solutions as urban fixed-rail systems. . . .

A. Some of the short-range solutions are not that expensive. The capital outlay for buses is comparatively small. The problem with buses, I think, will be the ability of the bus industry to supply them. The Federal Government might have to allocate buses if we get into a very serious crunch.

I don't think all of this means that UMTA has to stop the funding of urgently-needed mass transit projects. What it does mean is that for new systems in particular the application of criteria will be very stringent.

Since this is not a short-term crisis, but is going to be with us from now on, and because the solutions probably lie in the area of more electrical energy, we certainly should not be postponing coming to agreement on what needs to be done in the great metropolitan areas in order to secure ourselves for the long future.

With respect to our own priority programs—the Second Ave. subway, the cross-63rd St. line, and the southeast Queens line—we see our way clear to pushing ahead with Federal aid.

Q. You speak of a long-term crisis. How long?

A. What we face is not a short term thing and I think it's very important that people understand this. The temporary interruption of the flow of Arab oil to this country really just sort of pulled back the curtain on the reality that confronts us. We're simply going to have to develop energy sources other than oil, not just because we have a political problem deriving from the Middle East war, but because there is not enough known oil reserves in the world to meet the kind of demand we have been placing on it. We're going to have to go to nuclear energy. We're going to have to use other fossil fuels, like coal. And as a society, we're going to have to decide what is the best use of given resources. For example, we in the transit industry are beginning to face shortages that are not just diesel oil; we have encountered a shortage in antifreeze. In another area, we find that a certain type of insulation may become in short supply because it's a petrochemical derivative. We may well find we're going to have to reserve certain kinds of petroleum for the petrochemical industry.

So we're going to have to come up with more in the way of energy resources, and this again puts emphasis on public transport, because the kind of energy we are looking to is basically electrical energy.

Q. What kind of future do you see for rail passenger transportation?

A. Certainly those areas that have in existence rail rapid transit and commuter rail facilities, or that have the

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potential for it because the rights of way exist and are in reasonable enough shape to be rehabilitated—those areas are going to have an advantage in the immediate years ahead. Many of them, strangely enough, had a disadvantage in the past as the automobile was scattering the population. The core city areas of so many of our metropolitan areas—Boston, Philadelphia, New York, Chicago—have been under a threat from the urban spread and the automobile; now the existence of these rail systems is going to greatly advantage these core cities because it's going to mean that people who live there can get to work, it's a good place for business headquarters, you will not be dependent on the peripatetic nature of the automobile when and if rationing comes.

The impact of the crisis, therefore, will be to highlight the advantages of mass transportation generally and rail transportation in particular. One of the reasons for this is the greater efficiency in terms of energy use by these facilities. The hauling of people by rail is a lot less expensive, in terms of energy consumption, than by private automobile or by bus. The same is also true of railways with respect to freight movement, for that matter.

This situation provides a tremendous opportunity for everybody in the mass transit industry to show what mass transit can do. We start, however, with certain disabilities, in that many of these facilities have been allowed to deteriorate.

Here in New York we have been involved now for some five years in modernization and rehabilitation of rail commutation facilities and the subway facilities, and fortunately we have had that amount of lead time: we have new equipment, we have extended electrification. Our gas-turbine equipment is on the horizon. The first cars should be delivered sometime in 1974 for revenue testing.

The challenge before us is one of providing a service—and I think one of the things we have to consider is how we can accelerate the staggering of work hours because for many of us, while we have adequate rail facilities to handle considerably more people, our peak hours are very highly congested. We have had some success already in this area, both in downtown and midtown Manhattan.

But the problem that confronts us is not only one of being able to carry the people: we also face the energy crisis ourselves. The MTA, for example, is the biggest single customer of Consolidated Edison. We consume over 3 billion kilowatt hours per year. Therefore any energy restriction which would place a burden on Con Ed would impact us. Already Con Ed has moved to achieve freedom from some of the environmental constraints which we have placed upon it as a community, in terms of burning low-sulfur diesel oil; now Con Ed is indicating that it may have to convert some of its facilities back to coal. We have a stake in that, consuming as we do 10% of all the power which Con Ed produces.

This means we have to practice economy in the use of energy. We are now saving between 1½% and 2% of our power demand, so far by cutting back on the heat in our cars. We have also cut back on lighting at some of our stations during periods of no service during the early morning hours.

We have had problems getting diesel fuel, and have gone to court three times to enforce allocations. But we thus far have not had to curtail service due to diesel fuel shortages.

Like the railroads we are being hurt by the rising cost of fuel—in fact, the rising cost of all energy. This unfortunately comes at a time when the pressures on our fare structures are very strenuous. And this again underscores the need for the kind of operating assistance which is contemplated by Congress. ■

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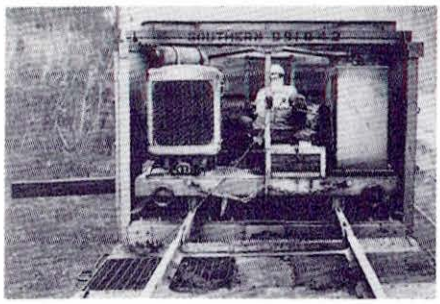

Tie unloader is redesigned for 50% faster speed

RMC's Tie Unloader has been redesigned to permit 50% faster operation. Capable of unloading a car of 350 to 400 ties in 35 to 45 minutes, it moves through special tie cars and pushes ties individually through hinged doors at floor level to deposit them perpendicular to the rail on the shoulder. Ties are then in correct position for optimum tie insertion operations. The redesigned machine also has components rearranged to provide better operator visibility and protection. Access to major components has been improved to simplify maintenance. There is a "walk through" feature for the operator's convenience and for passing tie car end bulkhead members through the machine for storage.

Circle 60 on reader service card

DC converter supplies regulated output

The Model 2919 regulated DC/DC converter is designed for 72-volt input and 13-volt output with high efficiency and features standard AAR packaging and connectors. The Glenayre Electronics unit is designed specifically for locomotive and other rolling stock installations. It incorporates current limiting, both short circuit and fast inrush, an input transient suppressor, and power-on indicator. Both the converter and the load equipment are protected against current surges. The unit weights 16 lb.

Circle 61 on reader service card

Data storage system can hold up to 30,720 characters

The Telemat data storage system is used as buffer storage of digital data within data-communication's networks. The unit can be supplied for total system applications as well as small self-contained units for data terminal for code and speed conversion. The Kameco Telemat data storage system will replace paper tape stations (type reperforators and distributors), magnetic tape memories, delay line memories and magnetic drum memories for up to 23,040 characters. The equipment has EIA Interface as well as isolated coupling for telegraph loops.

The maximum input/output speed is 4800 baud, depending on the number of extension cards. As an option, an additional storage of 7,680 characters can be supplied, giving a total of 30,720 characters with a maximum I/O speed of 600 baud.

Circle 62 on reader service card

Modem features remote testing

The General DataComm 201-9 modem incorporates diagostic features to allow local and remote verification of data set and system operation without the need for special tools or test equipment.

Available as a stand alone unit for terminal applications or as a rack mount unit for concentrator applications, the GDC 201-9 is a four-phase, phase shift modulated, synchronous set designed to operate at 2400 bps on unconditioned, 2- or 4-wire type 3002 private lines.

Diagnostic features clearly locate a failure within the system regardless of whether the fault is in local or remote equipment. Consequently, trouble-shooting need be performed from only one location.

Circle 63 on reader service card

Lightweight, portable wave analyzer covers audio spectrum

A new lightweight, compact, portable wave analyzer, Quan-Tech model 304-DL, covers the 1Hz to 5000 Hz range with 5 selectable bandpasses down to 1Hz. Signal amplitude indication is given as a linear or logarithmic function. The linear meter has a dynamic range of more than 70dB steps. A logarithmic meter scale reads -72dB to 0dB (full scale). When used with a recorder, the optimum data rise time allows a high

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12/10/73

speed response over a 90dB dynamic range. Multipliers extend range from 0.01 to 100V for full scale reading, providing total range from 100V to less than 0.3 microvolts.

The 304-L features electronic tuning and selectable, internal variable speed sweep circuits. When used with an oscilloscope, X-Y plotter or strip chart recorder the unit becomes a spectrum analyzer whose center frequency, sweep width and resolution can be varied over wide limits. Optional accessory permits total portable operation from a 12-volt car battery.

Circle 64 on reader service card

Sound measurements made with kit

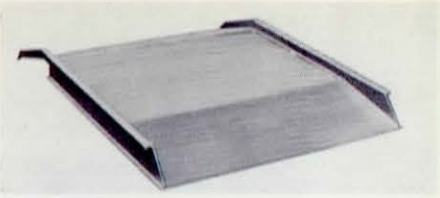
The Model 40-10 Sound Level Measuring Kit from Pulsar Instruments contains all the elements needed to make decibel readings. The unit has a sound level meter, sound meter calibrator, wind screen, condenser microphone, spare batteries and tools. A logarithmic amplifier displays the sound readings.

Circle 65 on reader service card

Plastic grating panel resists 72 kinds of corrosive material

The largest fiberglass reinforced plastic grating panel ever to be offered for corrosion-resistant structural assemblies is being produced as a stock item by Fibergrate Corp. The panel measures 5 ft by 10 ft and is 1½-in. thick with a 1½ in. square mesh. With proper support design it accommodates spans up to 5 ft with loading up to 150 pounds per square foot, with deflection of less than 3/8 in. The panels weigh about 180 pounds and are offered in four varieties: fire-retardant polyester, fire-resistant polyester, vinyl ester and epoxy. They are resistant to 72 different kinds of corrosive salts, acids and other compounds.

Circle 66 on reader service card



Lightweight walk board for loading, unloading

A lightweight, extruded aluminum walk board can be used for loading and unloading cars and trailers, or for spanning gaps between docks. The Rampmaster boards have an I-beam understructure that maximizes strength for their low weight. They accommodate pallet trucks and hand trucks while being far less expensive and easier to move. A Sure-Trac ribbed deck gives traction in all types of weather.

Circle 67 on reader service card

NEW LITERATURE

STATIONARY BATTERIES. Exide power batteries are described in a colorful brochure from the manufacturer. Sixteen different batteries in the line come with ratings from 50, 100, 150 to 200 ampere hours. They are said to be ideal for varying types of installation on railroads, for microwave installation, security systems and communications systems.

Circle 70 on reader service card

RADIO SERVICING. How to perform 20 basic servicing tests on FM, AM and SSB radio equipment is explained in a new set of application notes available from Singer Instrumentation. Each note includes a set up diagram, list of equipment required, a brief synopsis of the test followed by step-by-step instructions.

Circle 71 on reader service card

JACK OPERATION. A 6-page folder from Mimco, Inc., describes the operation of the firm's gate jack. It shows how the operator can remotely control the jack at a safe location away from the hopper car. Included are photos demonstrating how gate jack eliminates the major cause of accidents in hopper car unloading.

Circle 72 on reader service card

WHEEL FLAT DETECTOR. A paper from the Signaling Systems Department of Sweden's LM Ericsson tells how wheel flat detector JUL 400 makes it possible to monitor a passing train automatically. When a flat wheel is detected, a message is automatically transmitted to the nearest manned station where it sets off an audible and visual alarm.

Circle 73 on reader service card

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LETTERS

Mass transit and the handicapped

Scarsdale, N.Y.

To the Editor:

As an avid reader of Railway Age for many years and one who has had spastic paralysis all his life, I was most interested in the article "Mass Transit and the Handicapped" (RA, Oct. 8, p. 16).

It has been my personal experience that those both in and out of government who are so vocal about rendering aid to the handicapped are the very ones who do so at the expense of the handicapped. In fact it has been my experience that they use handicapped people as a commodity with which to either promote their own financial success, or their ego in showing how superior they are to those less fortunate than themselves.

Further, it is a control factor with which they keep the handicapped from being helped by those with a true sense of compassion which as the author of the article points out, has always been extended out of courtesy, but now would become an intolerable obligation to those who would be forced to provide such unwieldy courtesies as described in the article.

Federal aid to any group creates of that group a commodity with which the politicians and the social engineers can wheel and deal. As Federal expenses for the handicapped and the aged rise, the need of euthanasia to some becomes of vital importance as it does in all socialistic philosophies. Hence, the best aid to the handicapped is not Federal, but to treat them equally without favor, for through the treatment true compassion by interested individuals without subsidy but out of love, would be brought forth.

Charles Harwood, Jr.
Research Economist

Oldest subscriber?

New Haven, Conn.

To the Editor:

My attention was attracted by John Barriger's name on page 59 of your issue of Oct. 8. May I be permitted to enter the contest as to the longest time subscriber? I joined the A.R.E.A. [American Railway Engineering Association] in 1910 when I was bridge engineer of the Missouri Pacific Railway, and subscribed to Railway Age a year or two earlier.

Knowing John and admiring him so much, I would not doubt that he started reading it when he was about 10 years old.

President W.W. Atterbury told me about 1930 that he hoped to make John president of the Pennsylvania some day.

C.E. Smith
Retired Vice President
New York, New Haven & Hartford

For the record

Raleigh, N.C.

To the Editor:

My attention has just been called to an error in your reporting of Norfolk Southern's second quarter 1973 results, on page 66 of your October 29 issue. Net income for the quarter should have been rounded to (1) rather than (801), since our loss for the quarter as reported to the Interstate Commerce Commission was $801.

Hurst Owen
Vice President-Comptroller
Norfolk Southern Railway Company

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Circle 23 on coupon page 59

People in the News

Jack C. Humbert
ICG

Paul H. Reistrup
ICG

Henry F. Davenport
ICG

Paul S. Settle
RPI

C. Bruce Ward
RPI

J.W. Archterfeldt
Vapor

DELAWARE & HUDSON.—**George R. Brown** appointed division sales manager, Scranton, Pa.

DENVER & RIO GRANDE WESTERN.—**L.L. Barenberg,** district representative-sales Denver, Colo., appointed coordinator-intermodal marketing there and has been succeeded by **B.A. Barnes, Jr.**

ILLINOIS CENTRAL GULF.—**Jack C. Humbert** named senior vice president-operations, to succeed **Otto H. Zimmerman,** executive vice president-operations, retired (RA, Nov. 12, p. 58). **Paul H. Reistrup** appointed senior vice president-traffic, and **Henry F. Davenport,** senior vice president-administration.

SUPPLIERS

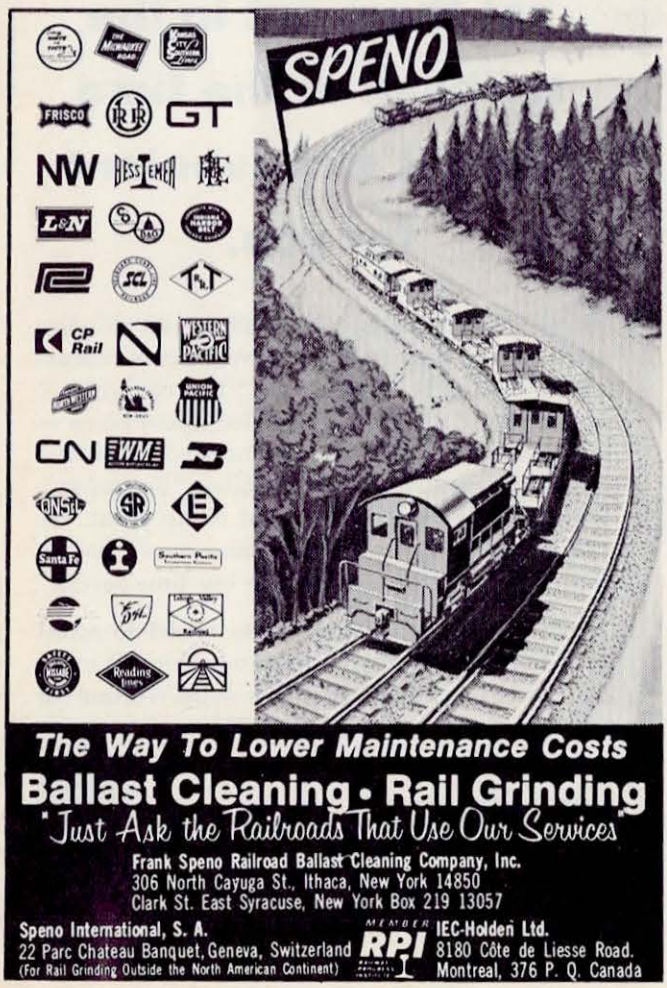
Paul S. Settle, president of **Railway Maintenance Corp.,** Pittsburgh, is the new chairman of the **Railway Progress Institute. C. Bruce Ward,** division president, **Marine & Rail Equipment Division, FMC Corp.,** Portland, Ore., is the new vice chairman.

Juergen W. Achterfeldt has been appointed sales engineer-railroad marketing group, **Transportation Systems Division, Vapor Corp.,** with headquarters in Chicago.

OBITUARY

David S. Neuhart, 72, who retired in 1970 as superintendent of motive power and machinery, **Union Pacific,** died Nov. 6 at Salt Lake City, Utah. Mr. Neuhart, a UP spokesman said, developed the 8,500-horsepower gas turbine locomotive and the 6,600-horsepower diesel-electric "Centennial" locomotive, the largest and most powerful in the world.

Carleton K. Steins, 82, who retired in 1956 as mechanical engineer, **Pennsylvania** (now Penn Central) died Aug. 13 in Rosemont, Pa.



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Circle 25 on coupon page 59

Market Outlook

CARLOADINGS

Loadings of revenue freight in the week ended Nov. 17 totaled 554,540 cars, according to the Association of American Railroads. This was a decrease of 3,300 cars, or 0.6%, compared with the previous week, and an increase of 19,115 cars, or 3.6%, compared with the corresponding week last year. Ton-miles generated by carloadings in the week ended Nov. 17 are estimated at 17.1 billion, an increase of 8.6% above the corresponding week of 1972.

REVENUE FREIGHT CARLOADINGS

Commodity	Nov. 17 week	Nov. 10 week
Grain	35,255	35,468
Farm products	19,835	20,086
Metallic ores	34,815	37,171
Coal	87,957	93,549
Crushed stone, gravel & sand	29,993	29,630
Nonmetallic minerals	16,293	16,179
Grain mill products	22,190	21,333
Food and kindred products	24,597	24,570
Primary forest products	24,747	23,159
Lumber & wood products (except furniture)	16,168	16,004
Pulp, paper & allied products	22,984	23,151
Chemicals & allied products	28,305	28,167
Petroleum products	9,470	9,207
Stone, clay & glass products	21,839	21,261
Coke	8,100	8,671
Metals & products	27,028	26,732
Motor vehicles & equipment	27,493	29,216
Waste & scrap materials	17,670	17,169
Forwarder & shipper assn. traffic	11,694	11,386
All other carloads	67,524	65,445
LCL traffic	583	553
Total cars loaded	**554,540**	**558,107**
Cumulative total, 46 weeks	1973	1972
	24,345,324	23,220,377
Estimated revenue ton-miles (billions) 46 weeks	750.9	691.6

PIGGYBACK LOADINGS

U.S. piggyback loadings for the week ended Nov. 10 totaled 31,614 cars (12.0% above the corresponding week last year) and 54,960 trailers or containers (up 10.2% from 1972). Cumulative volume for the first 45 weeks of 1973 is 1,330,570 cars (up 15.9% from last year) and 2,304,257 trailers or containers (up 18.8% from 1972).

IN CANADA

7 days ending	Tons of Revenue Freight	Cumulative Totals
Nov. 7, 1973	5,414,053	204,050,601
Nov. 7, 1972	4,758,274	178,875,769

● *Boston & Maine.*—Has taken delivery of the first cars of a $13-million order for 700 50-foot box cars leased from U.S. Railway Manufacturing Co. The cars are being manufactured by Southern Iron & Equipment Co. Plans have been announced for leasing 12 diesel locomotives for use in long-haul, heavy-tonnage freight service; also, B&M will sign an agreement with a major automobile distributor for construction of a new auto-unloading yard near Ayer, Mass., primarily for Ford Motor Co.—it is expected the railroad will gain 6,000 additional carloads a year.

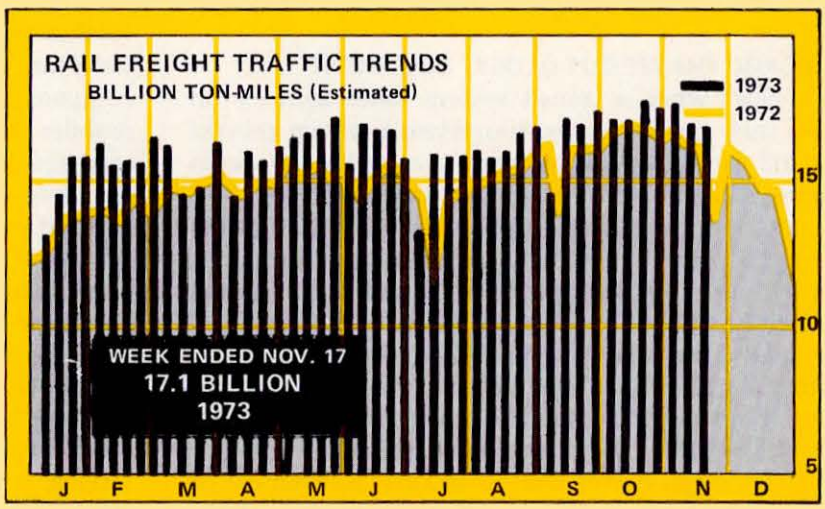
● *National of Mexico.*—Plans to buy 6,000 box cars in 1974. Half the cars will be built by Constructora Nacional, and the other 3,000 will be purchased abroad.

● *Ralston-Purina.*—Purchased 250 insulated RBL-type freight cars from United States Railway Equipment Co. All the cars—built to specifications outlined by the Grocery Manufacturers Association—are equipped with Evans Products' Dual Air-Pak bulkheads and fully cleanable floor track, protecting products from damage in transit and contamination.

● *Freight-car orders and deliveries.*—The following report has been received from the ARCI and the AAR:

	Oct. '73	Sept. '73	Oct. '72
DELIVERED			
Built new by carbuilders	6,016	4,505	3,487
Built new in R.R. shops	357	292	644
Built new—total	6,373	4,797	4,131
Rebuilt	107	61	159
TOTAL DELIVERED	**6,480**	**4,858**	**4,290**
ORDERED			
To be built new by carbuilders	13,410	7,442	3,116
To be built new in R.R. shops	125	700	200
To be built new—total	13,535	8,142	3,316
To be rebuilt	747	5	0
TOTAL ORDERED	**14,282**	**8,147**	**3,316**

ON ORDER AND UNDELIVERED	Nov. 1, '73	Oct. 1, '73	Nov. 1, '72
To be built new by carbuilders	55,078	47,714	16,010
To be built new in R.R. shops	2,235	3,067	3,812
To be built new—total	57,313	50,781	19,822
To be rebuilt	816	176	1,493
TOTAL ON ORDER	**58,129**	**50,957**	**21,315**



Source: Association of American Railroads

Moving People

FUEL PRIORITY FOR PUBLIC TRANSPORT

Public surface passenger transportation lines, including local and intercity rail and bus operations, are to get the distillate fuel they need. The government's mandatory allocation program does specifically exclude "tour, recreation and excursion services" by these carriers from a guarantee of fuel supply. Although this transportation priority was proposed by the White House for the allocation program, President Nixon failed to mention it in his recent address detailing emergency fuel actions.

NEW BI-LEVELS FOR ICG COMMUTERS?

The Chicago South Suburban Mass Transit District, owner of the $40-million, 130-car fleet of bi-level electric commuter equipment operated by Illinois Central Gulf, is reported to be taking initial steps to acquire an additional 16 cars. A bid document for the new additions to the fleet has been submitted to the Urban Mass Transportation Administration, with an option asking for funds to permit purchase of still another 10 cars. A CSSMTD official says that more cars are needed because periodic inspections of the equipment in the existing fleet are accounting for more down-time than was originally anticipated, placing a severe strain on the service. One of the 16 cars would be purchased outright by ICG to replace the car which was damaged beyond repair in a fatal commuter train collision on the road's surburban line last year. A "piggyback" arrangement is said to be attached to the bid document which would allow a mass-transit district acting on behalf of Indiana commuters on the Chicago South Shore & South Bend to order 27 similar bi-level cars at the same time. A move is also reported to be afoot, spearheaded by Sen. Vance Hartke, to secure local funding.

CHICAGO PHASES OUT OLDEST EQUIPMENT

It's news when a transit system takes delivery on new cars—but it's news, too, when a system gets rid of old ones. Especially when the oldies have seen more than 50 years of service and have been, in a manner of speaking, still going strong. It was Chicago Transit Authority that held the retirement party, for 80 veteran all-steel cars which had remained in use on CTA's Evanston route only because they are equipped with trolley poles. As part of a capital-renewal program funded by UMTA and Illinois DOT, CTA has now installed third rail on the Evanston line, and Evanston riders are now commuting in newer and faster cars. Retirement of the old cars, noted CTA Chairman Milton Pikarsky, removes "the last bits of nostalgia reminiscent of the old-time L's and streetcars—bare incandescent lightbulbs, window shades, seats that flip over, handles for straphangers, the hiss of air brakes and the whirr of traction motors linked to axles through gear and pinion." Regular riders, it's said, don't mind a bit.

AUTO-TRAIN DECLARES 5% STOCK DIVIDEND

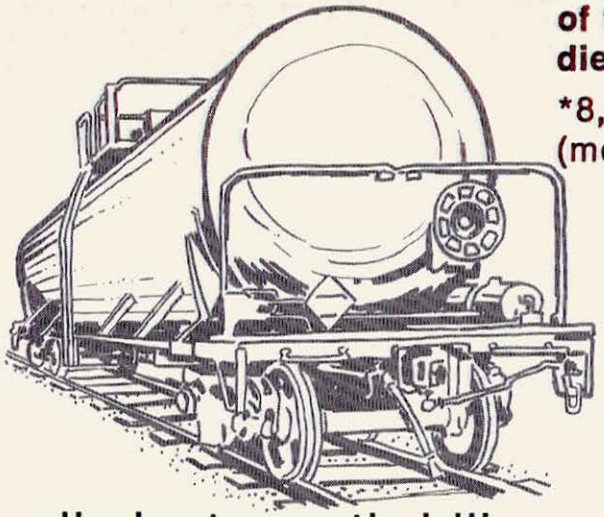
Auto-Train Corp. announced late last month a 5% stock dividend that was payable to stockholders of record on Dec. 6. Eugene K. Garfield, president of Auto-Train, said the dividend would be paid upon receipt from the ICC of approval for the issuance of the shares. The announcement was made at the annual stockholders' meeting on Nov. 20.

ROHR PRT PROPOSED FOR LAS VEGAS

The Monocab PRT, designed by Rohr, has been selected from among three competitors by A.J. Kavanaugh & Associates as the proposed $100-million overhead transportation system for Las Vegas, Nev. Las Vegas officials must now consider the Kavanaugh PRT plan which would connect Las Vegas airport with the downtown, extending along the famous "Strip." If given approval, the PRT would be financed, built and operated by the Clark County Transit Authority and could be running by 1976.

FUEL CRISIS AND AMTRAK: A MIXED BLESSING

While airlines were cancelling flights and laying off crews in compliance with the President's fuel-conservation guidelines, a different drama was being played out at railroad ticket offices. In the Northeast corridor, Amtrak reported a 40% increase in inquiries over a year ago; late in November passenger volume in the corridor was running 12% ahead of last year. Meanwhile, the Auto-Train Corp., a private company which hauls passengers and their automobiles between Lorton, Va., and Sanford, Fla., reported that requests for space had doubled since the worsening of the energy crisis. Auto-Train pointed out to a TV interviewer that it took only 25 gallons of fuel to get an automobile from Virginia to Florida by train, but 90 gallons over the highway. Passenger-train partisans were not entirely happy with the sudden rush to trains. They feared that the lack of adequate equipment to handle a great new surge in business, and the likelihood that sub-standard equipment might have to be pressed into service, would mar the image of train travel as an attractive alternative to the auto and the plane.



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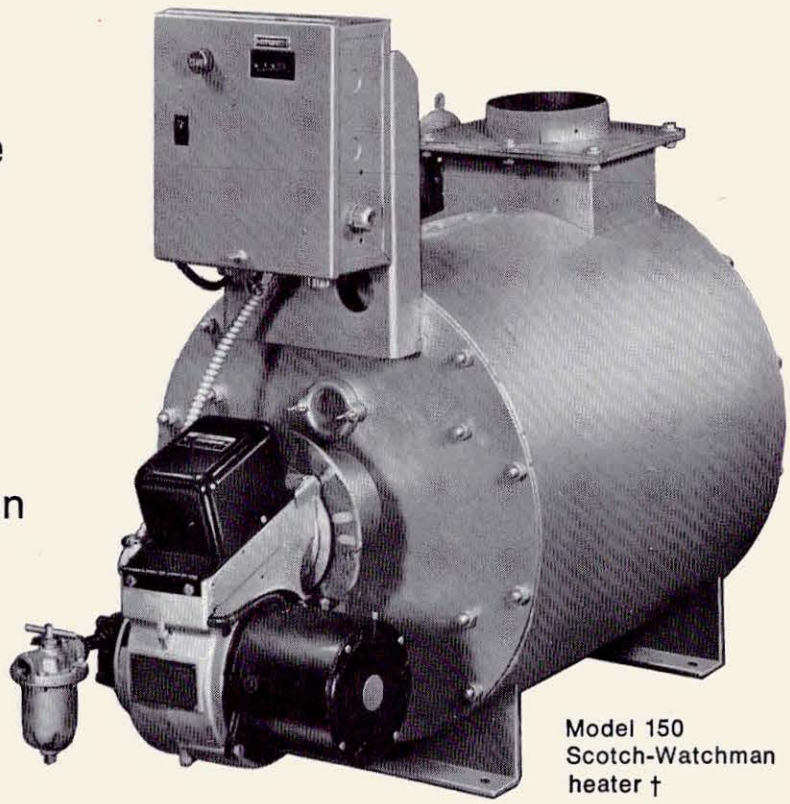

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Circle 27 on coupon page 59

Advertisers Index

Alco Engine Div. 16
American Steel Foundries 57
ANF-Frangeco 51
ACF Industries, Inc. 11, 53
Atlantic Richfield Company 41
Bethlehem Steel Corp. 3
Boeing Vertol 34-35
CF&I Steel Corporation 17
Canadian Steel Wheel Co., Ltd. 9
Difco, Inc. 37
General Railway Signal . . . . . BC
Ernest Holmes Co. 48-49
Houston Company 43
The Kerite Company . . . . . IBC
Koppers Company, Inc. 12
Morrison-Knudsen Company, Inc. 66
New York Air Brake Co. 32-33
The Okonite Company 39
Pullman, Inc. 21-26
The Rails Company 62
The R.C.A. Rubber Co. 58
Safety Electrical Equipment Corp. 4
Schramm, Inc. 6
The Sea View Hotel 67
Frank Speno Railroad Ballast Cleaning Co., Inc. 62
Standard Railway Equipment 14-15
The Timken Company 18-19
Vapor Corp. 65
Westinghouse Air Brake Co. . . . . IFC, 44-45
Whiting Corporation 61

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Viewpoint

For once, on the side of the angels

Nothing, perhaps, better underscores the bitterness of the battle between those concerned with environmental protection and those concerned with development of new energy sources than the bumper stickers which appeared on the energy folks' cars during the fight over approval of the Alaskan pipeline. The message: "Let the bastards freeze in the dark."

The environmentalists tend to use the language somewhat less colorfully, but their opinions are no less fixed. Just recently, more than a dozen groups were attacking proposals to lower environmental standards on grounds that the nation was being victimized by an "energy hysteria" promoted by the Administration and industry.

Interestingly, the cause of rail transportation seems to be getting a boost from both sides. Those in government most concerned with energy conservation are talking-up the use of railroads—as the President did when he signed the '73 Amtrak bill. But those among the environmentalists who seem most vocally concerned are also talking-up railroads. One of the proposals of the dozen-plus groups protesting the alleged "energy hysteria" was that government encourage traffic shifts from highway to rail.

Railroad men could be pardoned for pinching themselves, splashing cold water on their faces, rubbing their eyes—just to make sure they're awake. Railroad men are not all that used to finding themselves on the side of the angels—especially when one of the few things warring factions in an argument can agree upon is that railroads are doing a pretty good job of what it is they do.

Railroad men, however, could also be pardoned for wondering if—pinch, splash and rub to the contrary—they're not still dreaming. And their wonder won't be wiped away until some time from now—when it's finally determined whether (1) they will in fact get the fuel needed for the job they'll be called upon to do, and (2) they will also in fact be fully recognized as the mode of transportation that does the most while doing the least damage, over-all, to the environment.

A ROLE FOR EACH MODE OF TRANSPORT

This is not to be construed as an attack on other forms of transportation—each of which has some jobs that it does better than any other form. In times like these—from both the environmental and the energy standpoint—each mode *should* be doing what it does best. In the long run, nobody's going to suffer.

What happens next is, probably, anybody's guess. The Administration talks of making the nation self-sufficient for its energy needs by 1980. Environmentalists wonder what the country will be like by 1980 if "their" standards have to be relaxed in the name of energy self-sufficiency. Transportation managers, in all modes, have to wonder what their industries will be like by 1980—in terms of demand and of ability to meet demand at whatever level it may be.

Railway Age is concerned with railroads, but it is also concerned with transportation as a total industry. In the past, there has been a kind of unwritten law that what's good for one mode is automatically bad for the others. Modal agreement on the goals of the Surface Transportation Act—remember that?—repealed that unwritten law. Especially under today's circumstances, repeal should stick. Given any kind of rational decision-making in government, transportation—railroads very much included—will do its job and do it well.

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